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# **An enlightening discovery: Renovation of Williams House on the campus of Nanjing University**

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**Abstract**

From the late 19th century to the early 20th century, a number of missionary universities and colleges made outstanding contributions to higher education in China and left a valuable architectural heritage on their campuses. Among them, the University of Nanking (UNK), which is Nanjing University today, has played a significant role in the modern history of China. This project uses the renovation of an anonymous building on the UNK campus as an opportunity to illustrate the value of the building and offer a scheme for its conservation. The project applies archival research methods on historical documents, photos and maps; and empirical research via a site survey examining architectural features. The findings reveal the building (built no later than 1911) was the residence of John Elias Williams, a vice president of UNK. Next to the central axis of the campus, his residence was built temporary with a good view for supervising the construction of the campus. This research-based project enriches the history of UNK by recognising the cultural significance of an anonymous campus building, which provides important evidence for the development process of UNK.

**Keywords:** John Elias Williams; University of Nanking; missionary university; built heritage; campus heritage; architectural conservation; sense of place

## 1. Introduction

From the late 19th century to the early 20th century, a number of universities and colleges were established as the forerunners of modern higher education in China. Missionary universities directly introduced Western modern education to China and had a profound influence on culture, education, science and technology, medicine and other fields, with a tremendous influence on China's higher education. These missionary universities not only laid a strong foundation for China's higher education and contributed to the cultivation of talent in many fields, but also left a valuable architectural heritage in campus planning and campus architecture.

Campus buildings, as the architectural heritage of a university, play a significant role in school or campus identity in Western universities. However, campus architectural heritage has not been well preserved in China. The heritage status of China's historic campus buildings does not often match the value of campus built heritage. In other words, the value of campus built heritage has often been neglected or misunderstood, and consequently damaged in the absence of heritage listing. To understand the value of campus built heritage, its history and attached socio-cultural and emotional values should be taken into consideration; and the built heritage along with the campus should be defined as a place full of humanistic spirits and values. However, the sense of place has been diminishing in many Chinese universities because of the mismatch between the history of a university and its campus, losing their *genius loci* and the identity of a place (Uzzell 1996).

Nowadays, the concept of place is widely used in the field of heritage management. From this perspective, heritage should be defined as a place that includes a historic building or site, as well as its history and attached socio-cultural environment. As Smith (2006, 75) argues:

*This idea of place is vital for understanding heritage. Heritage as place, or 'heritage places', may not only be conceived as representational of past human experiences, but also as creating an affect on current experiences and perceptions of the world. Thus, a heritage place may represent or stand in for a sense of identity and belonging for particular individuals or groups. However, it may also structure an individual's response and the experiences an individual may have at that place, while also framing and defining the social meanings these encounters engender.*

This project discovers an unvalued and anonymous campus building being renovated on the north Gulou campus of Nanjing University that commissioned by the university administration department. Nanjing University derives from UNK and occupies the former site of UNK in the former capital city Nanjing (spelled 'Nanking' in the past). By examining historic photos, maps, documents and relevant archives, and reporting on a site and architectural inspection, this project aims to discover the history and value of the anonymous building on campus to address research questions such as When was the building built? Who worked or lived in this building? What was the relationship between this building and the campus? Then, the findings may help to determine how to conserve the value of this building and its surrounding environment in practice, which will further create a sense of place and identities attached to the campus and build connections between the campus and students, staff and alumni.

In this research-based project, empirical research methods were applied, involving historical materials and material objects that are mutually validated. Specifically, literature and archival research (history, documents, photos and historic maps) were adopted to discover historic information about the anonymous building. Site and architectural surveys were also conducted to examine aspects of the building such as its architectural features.

Regarding the architectural survey, our team participated in the site and architectural surveys and the conservation process from 2018 to 2019. By carefully examining the building in terms of its space, materials and structure, a digital model of the building was reconstructed to analyse and understand its construction process and characteristics. Then the building was restored based on information of its current state, archival research and the digital model analysis. These archival research and architectural analyses contributed to the final scenario of building conservation, which may create a sense of place on campus.

## 2. Discovering an anonymous building on campus

A diagram is used to give the reader an overview of the process of discovering the key figure who worked or lived in this building (Figure 1).

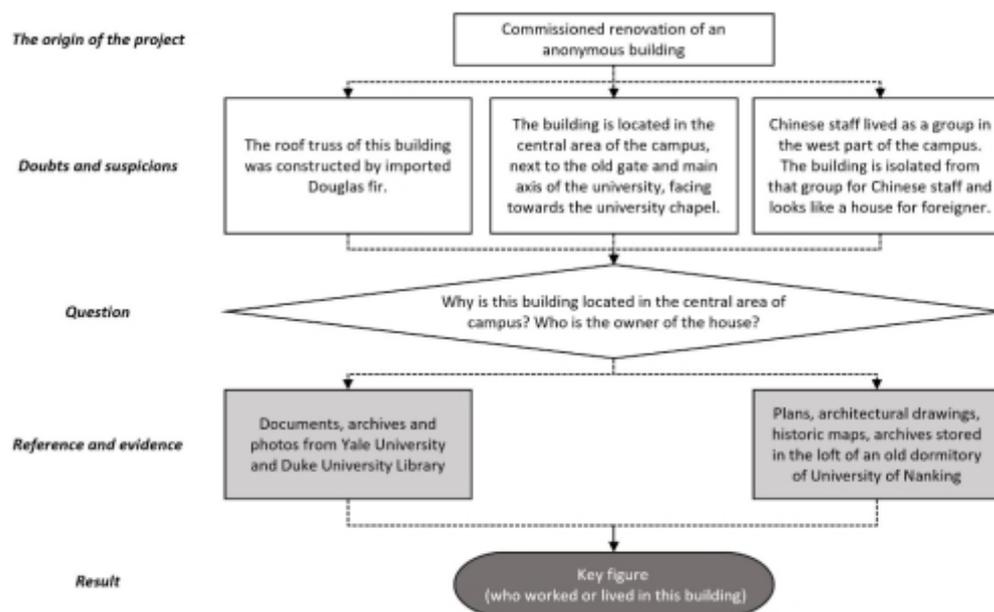


Figure 1 The process of finding the key figure who lived or worked in this anonymous building

The research began with an inspection, which revealed a complex roof structure made of strong timber material, with a bottom chord made of Douglas fir and reaching 12 metres. According to Chinese architectural history, Douglas fir was not a local construction material grown in China but was imported from overseas, which was rarely used in local buildings. Therefore, the owner/user/administrator of the building was suspected of having the power to

obtain the overseas material to construct such a building. Further, the layout of the building differs from that of a traditional Chinese residence, suggesting it was designed as a foreign residence. Regarding its position, the building is located next to the main axis of the historic campus region, which is the central area of the campus. Thus, two emerging questions were why was this building built in the central area of UNK; and who worked or lived in this building? As a missionary university founded by American churches, UNK has separate zones for teaching and residence. The outstanding position of the building, located in the central area on campus, implies it might be used by a Westerner of high social status who must have a close relationship with the university.

Historic maps and documents may contain clues about the identity of who worked or lived in the house. However, from the 1910s to the 1970s, a series of devastating historic events occurred in Nanjing, including the Nanjing Massacre and the nationwide Cultural Revolution. Relying on the opportunity of renovating campus buildings during the centennial anniversary of the university in 2002, a box of historic documents, maps and architectural drawings were found in the loft of the campus dormitory. They may have been stored there intentionally to avoid them being destroyed or confiscated.

These documents included UNK campus planning maps, which were sorted chronologically to determine when the residence had been built. The first map to show the profile of a 'new residence' fitting that of the residence is a 1911 site survey map. The house appears on every campus map since, and on the 'Map of Ing Property Purchased by UNK' in 1919 reproduced in Figure 2 the building is labelled 'Mr Williams House #9' ('文宅' in Chinese), providing a key piece of information. From this point onwards, the key figure who lived in the house emerged. This led to further questions to be solved in the next section:

- Who was Williams?
- Why was his house built in the central area of the university campus?

- What is the significance for Nanjing University of Williams and his former residence?



Figure 2 Map of Ing Property Purchased by UNK

Source: Archive of Nanjing University (Volume 15, Campus Planning)

### 3. Discovering Williams

#### 3.1 Who was Williams

During a visit to the University of Pennsylvania in the United States (US) in 2011, the author by chance had purchased a second-hand biography entitled *John E. Williams of Nanking* (Wheeler 1937; Figure 3). According to this biography, Williams' full name was John Elias Williams (1871-1927), born in Coshocton, Ohio (US).

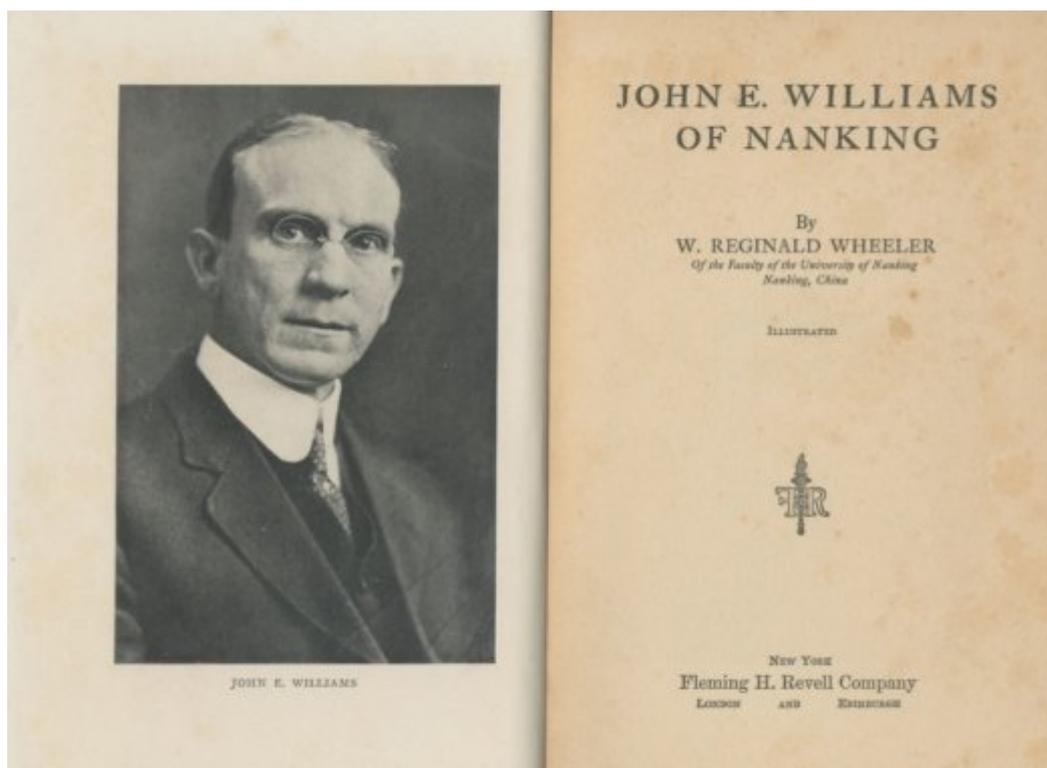


Figure 3 *John E. Williams of Nanking*

Williams received his commission as a missionary, being appointed to the Central China Mission of the Board, with ‘special funds’ supplied by the End Presbyterian Church of New York for his service in China. John and his wife Lilian Williams sailed for China attended a mission meeting held in Soochow on 20 September 1899. It was at these meetings that ‘newly appointed missionaries were assigned generally to a mission, and the mission had the right of assignment to a particular station on the field’ (Wheeler 1937, 43). Following the resignation of TW Houston—the second principal of the Presbyterian Academy (益智书院)<sup>1</sup> in Nanjing—Williams was assigned its third principal (Wheeler 1937, 58).

During the time in the Presbyterian Academy, Williams considered the issue of scattered educational resources in Nanjing by different missionary schools founded by different churches in China and advocated for cooperation rather than competition among missionary schools and churches. This idea contributed to establishing a united school in Nanjing. To

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<sup>1</sup> The Presbyterian Academy was founded by the American Presbyterian Mission.

promote consolidation of schools and colleges in Nanjing, during his furlough, Williams raised \$30,000 in cash and pledges, and \$10,000 credit for land as a foundation for the campus of a new united UNK (Wheeler 1937, 65–66). The Presbyterian Academy was merged with the Christian College (基督书院)<sup>2</sup> and united under the name Union Christian College (宏育书院) in 1906. It then merged with Nanking University (汇文书院) in 1910 to become UNK (金陵大学, Figure 4) and Williams was appointed as its vice president (Wheeler 1937, 58).

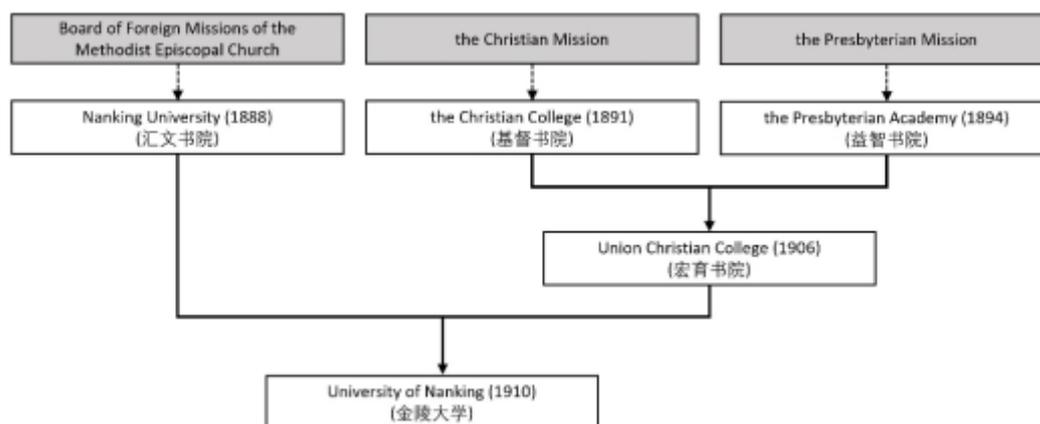


Figure 4 The administrative history of UNK

### 3.2 The death of J.E. Williams

Williams was an influential person in the promotion of Chinese higher education. However, he was sadly killed during the Nanjing Incident<sup>3</sup> in 1927. Despite varying descriptions of this incident, the widely accepted background is as follows. The advancing troops of the Nationalists' Northern Expedition Army arrived in Nanjing on 23 March and the defending troops of the Zhili–Shandong coalition were forced to withdraw into the city. The Northern Expedition Army thus broke into the city and caused chaos on 24 March. During

<sup>2</sup> The Christian College was founded by the Christian Mission.

<sup>3</sup> The Nanking Incident occurred on March 21–23, 1927 when Kuomintang (Chinese Nationalist) troops entered the city as part of their Northern Expedition military campaign (1926–1928). Troops particularly targeted the city's foreign residents; several were killed or injured and their property looted, and the American, Japanese and British consulates were attacked.

that period, large-scale anti-foreign activities<sup>4</sup> were undertaken throughout China: robberies and looting occurred frequently and some foreigners were even killed. These contributed to the Nanjing Incident, which had a devastating impact on the UNK. Among these impacts, the most grieved was the death of Vice President John E Williams. Wheeler (1937, 25–26) depicts the events of the morning of 24 March 1927 as follows:

*The soldier in front of Dr. Bowen<sup>5</sup> took his watch; the soldier before Dr. Williams reached for his watch and chain. In a friendly, half-joking way Dr. Williams remarked in Chinese, ‘You don’t want to take that, do you? That watch isn’t worth much, but my mother gave it to me and I would like to keep it’. The soldier who had been in such an ugly mood pointed his rifle at Dr. Williams, and shooting from the hip, pulled the trigger. With a cry of ‘Kwai! kwai!’ (‘How strange!’) Dr. Williams fell to the ground with a bullet through his temple.*

Williams’ death was mournful and tragic. According to Xie (2018), Williams’ tomb was located in the (since destroyed) foreign cemetery in the southwest part of Qingliang Mount in Nanjing. His gravestone was carved with an epitaph written by Zhengting Wang, then foreign minister of the Republic of China, and the epitaph was reproduced in the *Tribute in Memory of Dr. John Elias Williams* (Figure 5). In this tribute, Wang acknowledges Williams’ contribution to China and his kindness to Chinese people and expresses his deep regret and sadness over Williams’ death.

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<sup>4</sup> Since the early 1920s, ‘de-Christianise’ movements emerged to ‘take back’ education from foreign churches in China. They opposed imperialist cultural invasion by Christian education and aimed to promote nationalist education by Chinese staff; this later intensified into further nationwide anti-imperialist actions as part of the May 30 Movement of 1925.

<sup>5</sup> A J Bowen was then president of UNK.

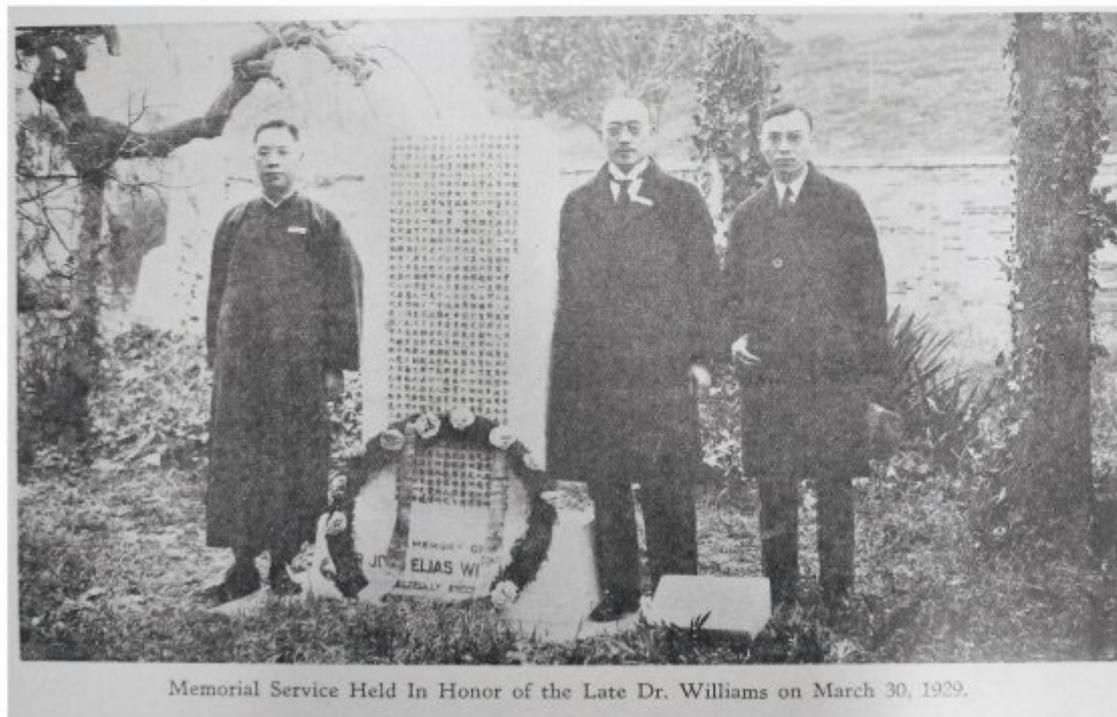


Figure 5 A copy of Williams' epitaph (top) and a photo of his tomb (bottom)

Source: *Tribute in Memory of Dr. John Elias Williams* from the Yale University Divinity School Library Repository

#### 4. Williams' House and University of Nanking

##### 4.1 The reason for the site selection for Williams' residence

Among the collected materials, the earliest showing Williams' House is a site survey map of the UNK in 1911 drawn by a US architect (Figure 6). This precious map clearly

presents the road system, ponds and property plots around the campus area of UNK. The map also shows existing missionary buildings (in red colour) and those non-missionary buildings (in grey colour) that were demolished for the construction of campus later.

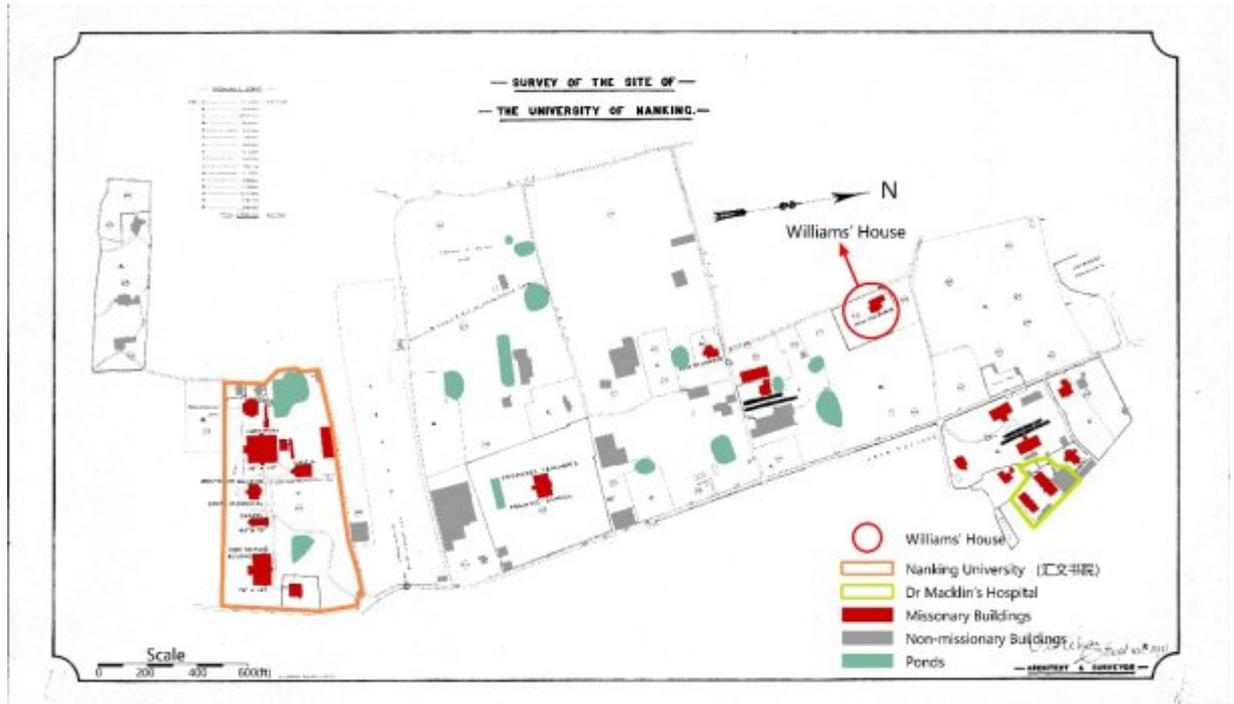


Figure 6 Survey of the site of UNK in 1911

Source: Yale University Divinity School Library Repository (Box 196-3833)

This 1911 site survey map shows several new residences are shown on the map, including the position of Williams' House as evident from its shape. The vacant lot at the northern end of the campus, which is the historic landmark area of Nanjing University today, provides further evidence that Williams' House is located at the central part of the campus. This raises the question of why the house was built in the central area of the university campus. Among the materials, a 1914 campus site planning map offers a clue (Figure 7) that the outline of Williams' House overlaps with a building profile drawn with dashed lines, which is also true for Bullock's House. Architectural drawings thus indicate that the two houses were planned for demolition to accommodate the future construction of new buildings, suggesting that Williams' House was only supposed to be temporary.

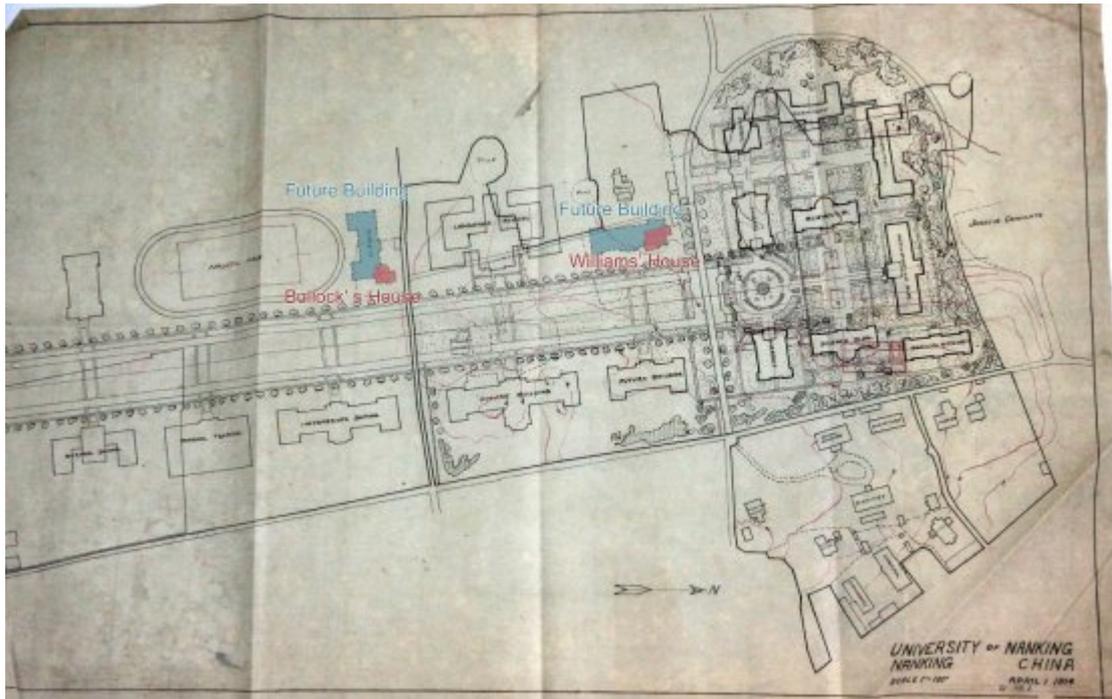


Figure 7 UNK campus planning map (1914)

Source: Archive of Nanjing University (Volume 16, Campus planning 02)

Among the collected materials, two photos taken from Williams' House show that the position of the house has a broad view over the future campus. Thus it is conceivable that the house was built as a watchtower to supervise the construction of the school buildings on the campus (Figure 8). In addition, a historic topographical map in 1914, overlaid with the campus plan (Figure 7) illustrates that Williams' House had been built before 1914 when the adjoining land for future construction of other school buildings was still a sloped vacant lot, which also supports the above assumption (Figure 9).

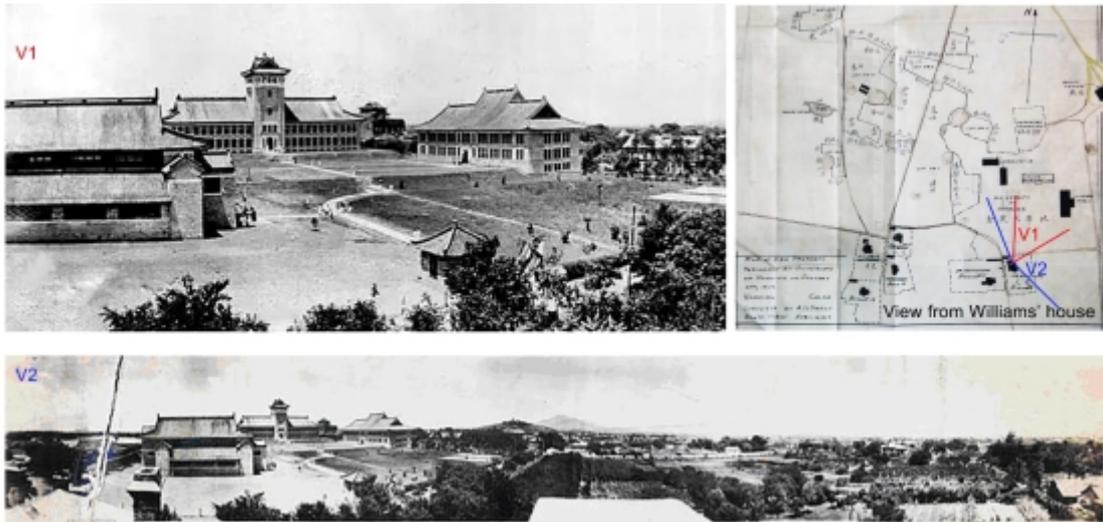


Figure 8 Photos taken from Williams' House

Source: Archive of Nanjing University



Figure 9 Topographical map of the campus (1914)

Source: Archive of Nanjing University (Volume 16, Campus planning 06); School buildings and Williams'

House were drawn and coloured by the author based on Figure 8

All materials examined as described above prove that Williams' House is one of the oldest buildings at the northern end of the campus, evidence for Williams' ambition to settle on the campus personally and establish a new university for modern high education in China.

#### ***4.2 Architectural information about Williams' House through historic photos***

Having discovered the relationship between UNK and Williams' House, the heritage value of this residence has been defined. As part of the commissioned project, it is also necessary to understand the original appearance of this building, to conserve and repair it.

Perkins, Fellows & Hamilton Architects (1925) describe the school buildings and campus planning of the UNK in the journal the *American Architect*. A panoramic photo attached to their paper shows several buildings including Williams' House, the Sage Chapel, the Administration Building (the Severance Hall), the Science building (the Swasey Hall) and the Drum Tower outside the campus, respectively (Figure 10).

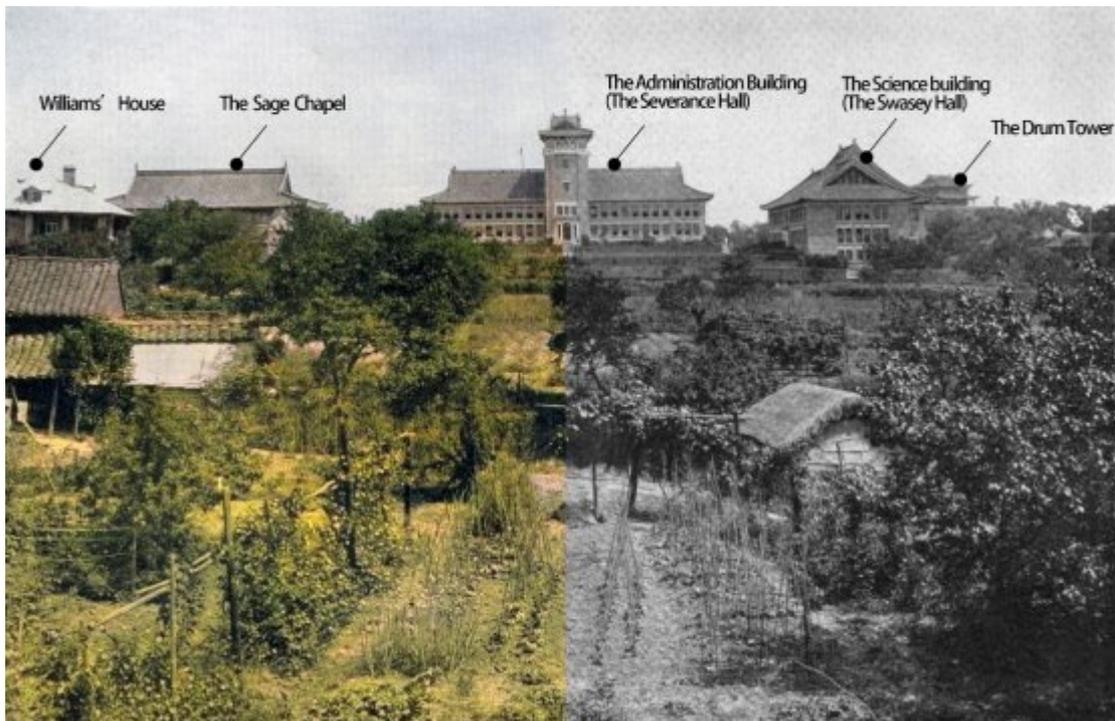


Figure 10 Full view of the old campus of UNK (1920)

Source: (Perkins Fellows & Hamilton Architects, 1925)

Another photo of the Sage Chapel of UNK taken between 1924 and 1927 was recovered from the photography collections of Sidney David Gamble.<sup>6</sup> To illustrate the complex appearance and surrounding environment of the chapel, Gamble took this photo from the northeast corner of the chapel, also capturing the northern elevation of Williams' House (Figure 11).

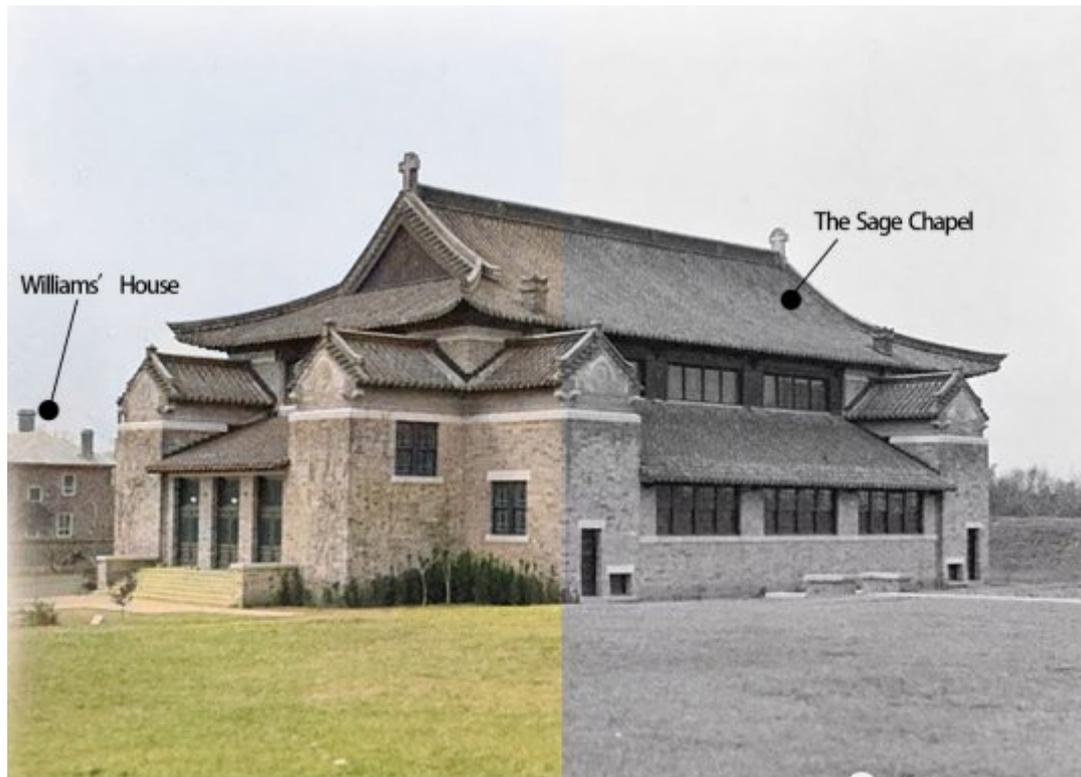


Figure 11 The Sage Chapel and north elevation of Williams' House (1924–27)

Source: Duke University Library

As a renovation project, restoring the building to its original appearance is the target; however, as it has been renovated several times its exterior and interior architectural characteristics have changed dramatically. Figures 10 and 11 provide some evidence regarding the original form and appearance of Williams' House. According to these photos taken from the north and south side of Williams' House respectively, the house was built with three dormers (on the south, east and west sides), which are preserved in the current building.

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<sup>6</sup> Sidney David Gamble (1890–1968) was an American socio-economist. Gamble visited China several times and took many precious photos that recorded the landscape and lifestyle in early 20th century China.

A sunporch can also be seen on the east side of the building. A sunporch (i.e. veranda), which was rarely used in traditional Chinese residences, reflects the typical lifestyle of a Western family and influenced the modernisation of residences in China since the late 19th century (Liu 2011). However, the sunporch of Williams' House might be considered more than just a lifestyle feature. Based on our visual analysis in Figure 8, Williams' sunporch may have been used as a location from which to supervise the construction progress of campus buildings.

Although Figures 10 and 11 offer evidence regarding the original form and appearance of Williams' House, the colours of the building materials were missing. Thanks to new AI technology, it was able to apply online AI Photo Coloriser to automatically colourise the photos by uploading the black-and-white photos without any tuning.<sup>7</sup> These colourised photos offer evidence for later reconstruction and renovation. For example, the colourised photos show that the house was built using grey bricks with four white timber windows in US style, as well as two chimneys, and the roof was built with a light colour, which all contribute to the later restoration.

## **5. Conserving Williams' House as a heritage building**

In 2018, William's House was listed as a historic building by Nanjing Government and our team was commissioned to propose a conservation scenario for this building.

After undertook this commission in 2018, we carefully inspected the oldest building in the north Gulou campus. The survey revealed that Williams' residence is composed of the main house and an attached part with a total area of 667 m<sup>2</sup>, including a basement (67 m<sup>2</sup>) and a loft (73 m<sup>2</sup>). Bricks and timber are the main materials used: both the main house and the attached part are constructed from masonry and timber. This was the typical structure combining Western and Chinese architectural and structural features in the early 20th century (Li 2004, 9). The main house, located to the south, has a typical US house style, while the

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<sup>7</sup> In this paper, a collage of the colourised and original photos has been used to show the difference.

attached part occupied by a kitchen and staircases is located in the north-west. The main entrance to the house faces east. There are three rooms on the ground floor (originally used as living, reading and dining rooms), and four bedrooms on the upper floor. Sunporches are attached to the southeast corner of the main house at both the ground and upper floors.

Before explaining our inspection and conservation strategy in the following sections, Figure 12 shows the appearance of Williams' House before and after conservation, which gives the reader a general impression of the result of the renovation. In the following sections, the survey and conservation scenario are introduced in five parts.



Figure 12 Before and after conservation

### ***5.1 Survey and conservation of brick walls***

As the building has been renovated several times by different departments, the layout has changed drastically. The interior space has been reorganised by the addition of new walls and the façade of the house, originally left with bare brick, has been covered by cement mortar. To repair a historic building, it is necessary to understand how it was constructed. To that end, the cement mortar was peeled off and additional external brick walls were dismantled, which blocked the sunporch, to reveal the original layout and external material for inspection. When inspecting the connection part between the main house and the attached part, we found it is obvious that the main house and the attached part were constructed in different types of masonry bonds were used in their exterior walls (Figure 13). No strong evidence has been found to explain why the house has two parts and uses different types of bonds in its brick

masonry. A possible hypothesis is that the difference reflects the innovation of craftspeople in saving on bricks and construction time. Despite the difference in exterior walls, the plinths in both the main house and the attached part are constructed with a strong bond type called ‘Flemish Bond’ to ensure the steadiness of the foundations.

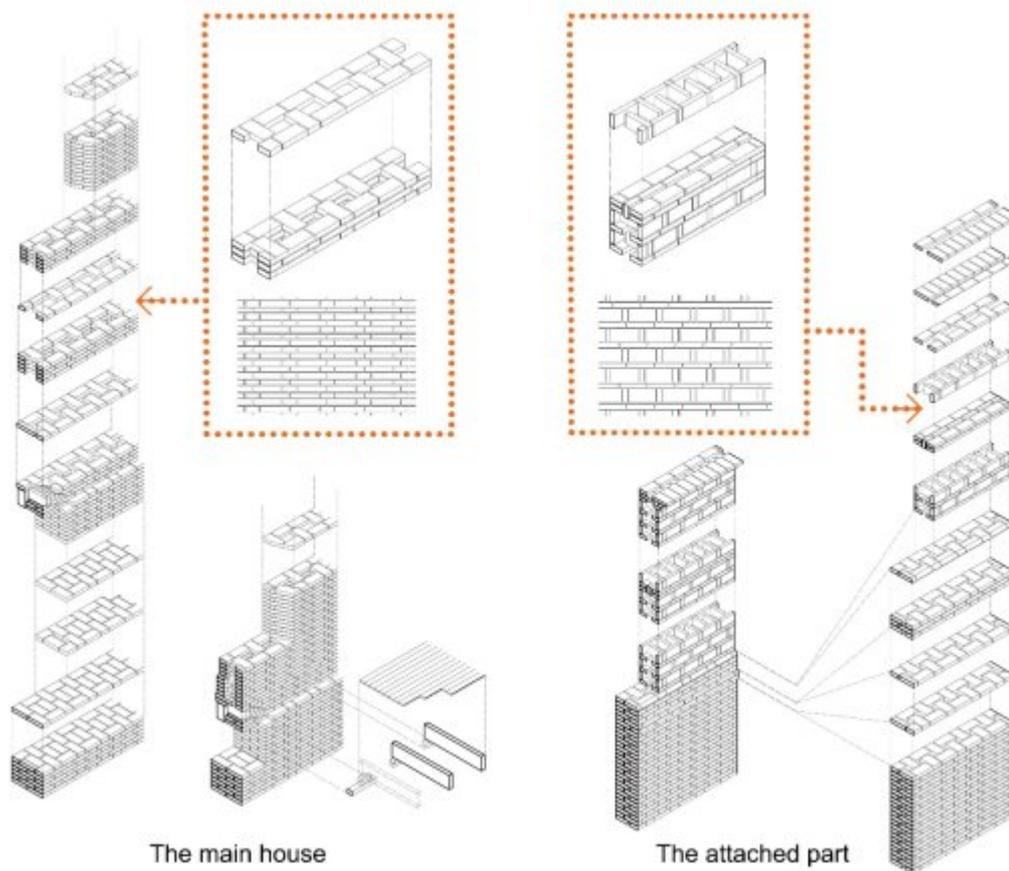


Figure 13 The construction of the brick walls of the main house and the attached part

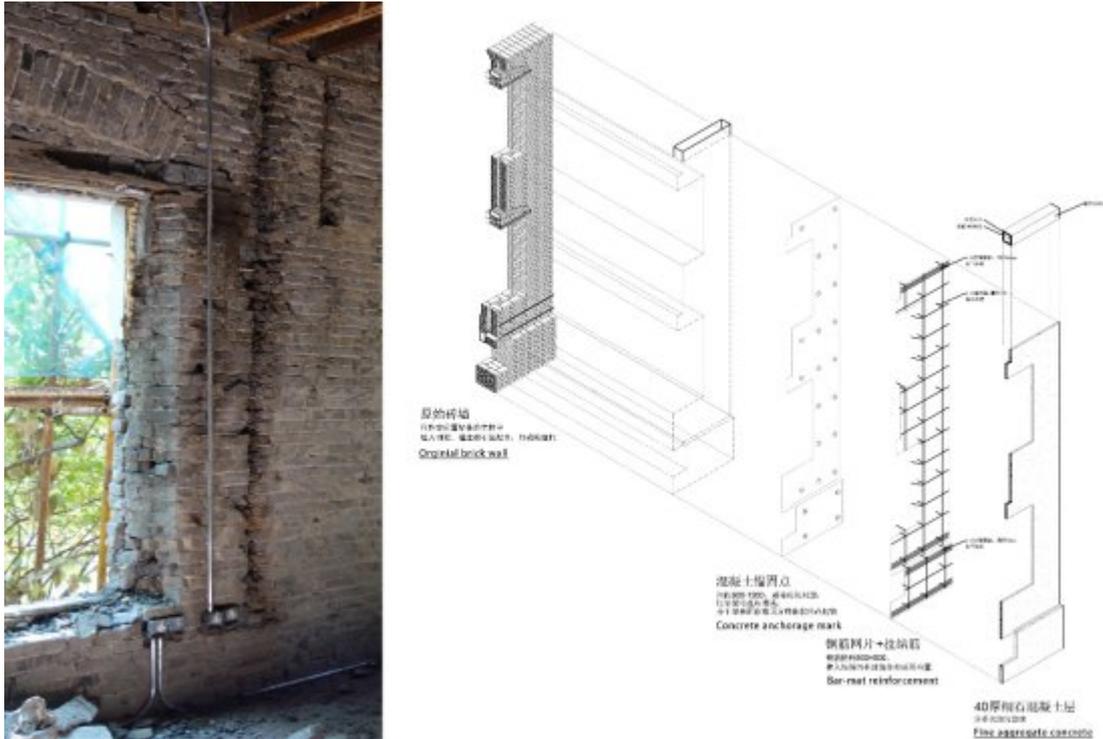


Figure 14 Reinforcement of the brick wall

During the survey, after the cement mortar was peeled off, the masonry structure of the building was looked vulnerable that many bricks of the house were destroyed and became rough and fragmented, which is structurally unqualified and needed reinforcement (Figure 14 left). To conserve the exterior brick wall façade of the building, bar-mat reinforcement was added on the inside of exterior walls (Figure 14 right).

Some of the openings in the exterior wall were blocked off and bricks around some openings were fragmented. Relying on our research on the construction of openings in brick walls (Figure 15), the openings were repaired according to vestigial evidence on the walls and the layout of the house. For example, fragmented bricks were replaced and the openings were recovered by adding flat arches<sup>8</sup> using the original construction method (Figure 16). Via this conservation approach, the original appearance of the walls has been recovered.

<sup>8</sup> A flat arch (sometimes called a straight arch) is a beam or lintel formed of cut brick laid in a radiating pattern, having a straight top and a soffit that may be either straight or with a camber.

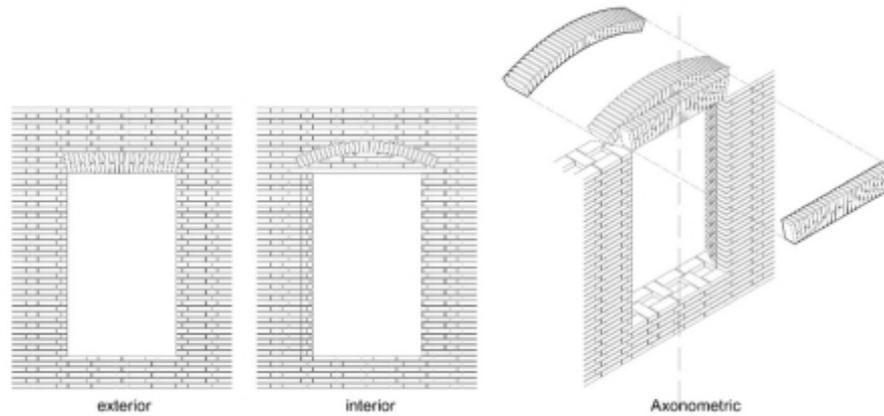


Figure 15 Research on the construction of openings in brick walls



Figure 16 Before and after the repair of an opening

## ***5.2 Survey and conservation of the interior space***

The layout of the interior space of the Williams' House has its historic value. However, since the house had been and was planned to be used as an office building before and after renovation, there might be conflicts between its historic values and use value because the layout had been and will be changed to some extent. Thus, the renovation should compromise and balance the historic value and use value.

To balance its historic value and use value, the current ground and upper floor plans were drawn based on the architectural survey and the new plan was designed to maximally recover the original plan of the Williams' House (Figure 17). When the cement mortar was peeled off, some traces that implied the original positions of the partition walls of the house were revealed. Thus, new light-weight partition walls have been added based on pieces of evidence

that include these existing traces and other similar housing plans (e.g., the Bullock’s House and Pearl S Buck’s House) on campus. As mentioned in section 6.1, to meet the requirement of structural safety, the inner side of the exterior brick walls was reinforced. Both the inner side of the exterior walls and new lightweight partition walls were painted white for the brightness of the interior space. Since white plastering was found originally during the survey, the white coloured interior space balanced the historic value and use value. In addition, some original brick walls were conserved, especially the fireplaces, which act as the mark of its history and the typical indoor features of an American styled house built in Nanjing then.



Figure 17 Floor plan of Williams’ House (before and after renovation)

Source: Photo credit after renovation belongs to Bowen Hou (left)

### 5.3 Survey and conservation of the sunporch

The sunporch from which we assume that Williams supervised the construction of the school buildings on the campus is another significant element of the façade of Williams’

House. As Figure 12 shows, before conservation, the sunporch was blocked off by later-added brick walls and covered by cement mortar with a white coating. Therefore, the initial step was to deconstruct the additional walls to examine the status of the original sunporch. The architectural survey of the deconstruction process suggested that the structure of the sunporch was weak as the columns were constructed using bricks connected only by timber beams, which had been damaged by moths. A fragment embedded in the columns illustrated that handrails had originally been installed around the sunporch, offering evidence for later conservation; however, the handrails were missing following multiple renovations. Second, the size and position of the holes in the columns implied there were ceilings under the floor.

These speculations were later proven by a historic photo of Williams' House taken from the southeast corner (Figure 18). Although the photo is of poor quality, it clearly shows the sunporch with white ceilings and handrails, as well as white windows and doors, which needed to be recovered.



Figure 18 An unclear photo of Williams' House

Source: Nanjing University Library

As ceilings covered the structure of the sunporch, it was able to strengthen the structure with new materials and techniques rather than repairing the original beams, without compromising the appearance. To recover the sunporch and ensure its structural safety, steel and reinforced concrete were used to rebuild the floor with timber decking as the surface material. Although steel was not the original material used in the floor of the sunporch, it has better durability as it cannot be damaged by moths, and could be hidden by ceilings under the floor (Figure 19).



Figure 19 The sunporch repair process

#### ***5.4 Survey and conservation of the underground level***

To reinforce the brick walls of Williams' House, the foundations were needed to be strengthened as well. When the timber decking of the ground floor was removed, an interesting underground level was uncovered.

To protect the house from moisture and humidity from underground, the interior was constructed with raised timber flooring and an underground ventilation system. In Williams' House, the underground level was constructed with brick sleeper walls to support the beams for the raised flooring. These sleeper walls divide the underground space into several zones, with openings between different zones reserved for ventilation. The underground space of the main house is divided into eight zones, including two long rectangular zones, five short rectangular zones and an L-shaped zone (Figure 20). Except for the latter, each zone has a venting interface on the exterior wall with a ventilation opening. The divisions of the underground level mean that humid air can be taken away, giving the timber flooring of the ground level more durability.

Normally, sleeper walls are constructed in the middle of a ventilation zone and perpendicular to the exterior wall to divide underground zones. However, the sleeper walls of Williams' House connect obliquely to the exterior walls in two positions (red circles in

Figure 19). This unusual method of construction avoids the ventilation openings on the central axes of the exterior walls. Thus, the speculation is that Williams' House may have been constructed in a hurry and the oblique connection may be an on-site adjustment during its construction process.

Given the height difference between the interior and exterior space, two platforms served as side entrances to the attached part of the house. To maximise the use of space under the east-side platform, a partially underground emergency fire pool was installed (Figure 20). Next to the fire pool under the attached part is an underground area located on the west side. Other than as a venting zone, this area is used as a storeroom, so underground venting zones are isolated between the main house and the attached part.

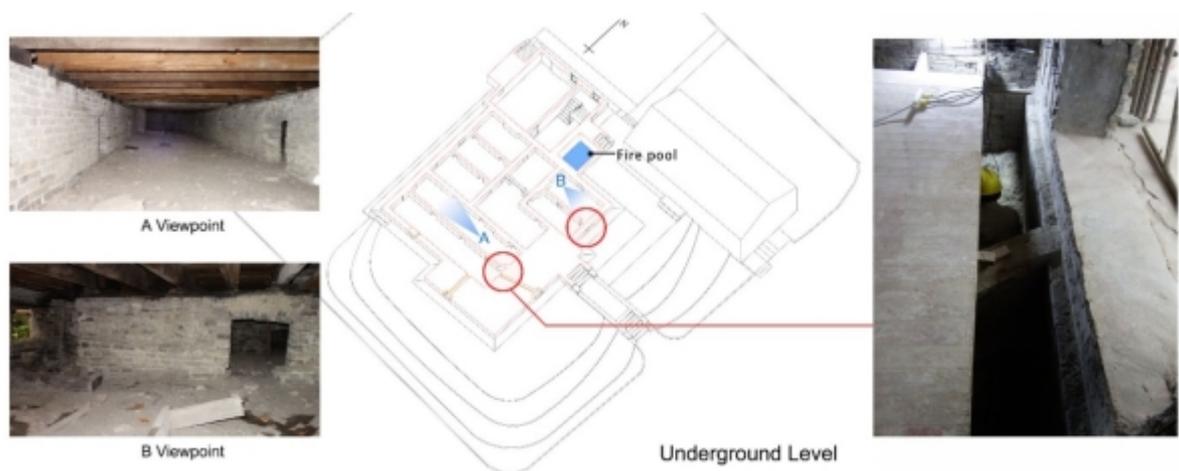


Figure 20 Underground level of Williams' House

### ***5.5 Survey and conservation of timber floors***

Timber, especially Douglas fir, is widely used in Williams' House. Douglas fir is a high-quality wood with few knots. It has high strength, wear-resistance and corrosion resistance, and was widely imported and used in buildings in China in the early 20th century. In masonry-timber structures, brick walls are constructed to support timber joists. In Williams' House, floors are composed of timber joists and decking.

As mentioned in Section 5.3, the timber decking of the ground floor was removed to reinforce the building foundations. Following this step, to protect the heritage value, the

timber decking to the ground level should be reinstated to ensure material authenticity; however, as the original timber was scuffed and caused an uneven floor, the university administrator requested it should be replaced with newly qualified timber decking. To preserve the material authenticity and collective memory associated with the original decking timber, it was used as a memorial decoration to cover an interior wall for touching to feel the sense of time and place (Figure 21).

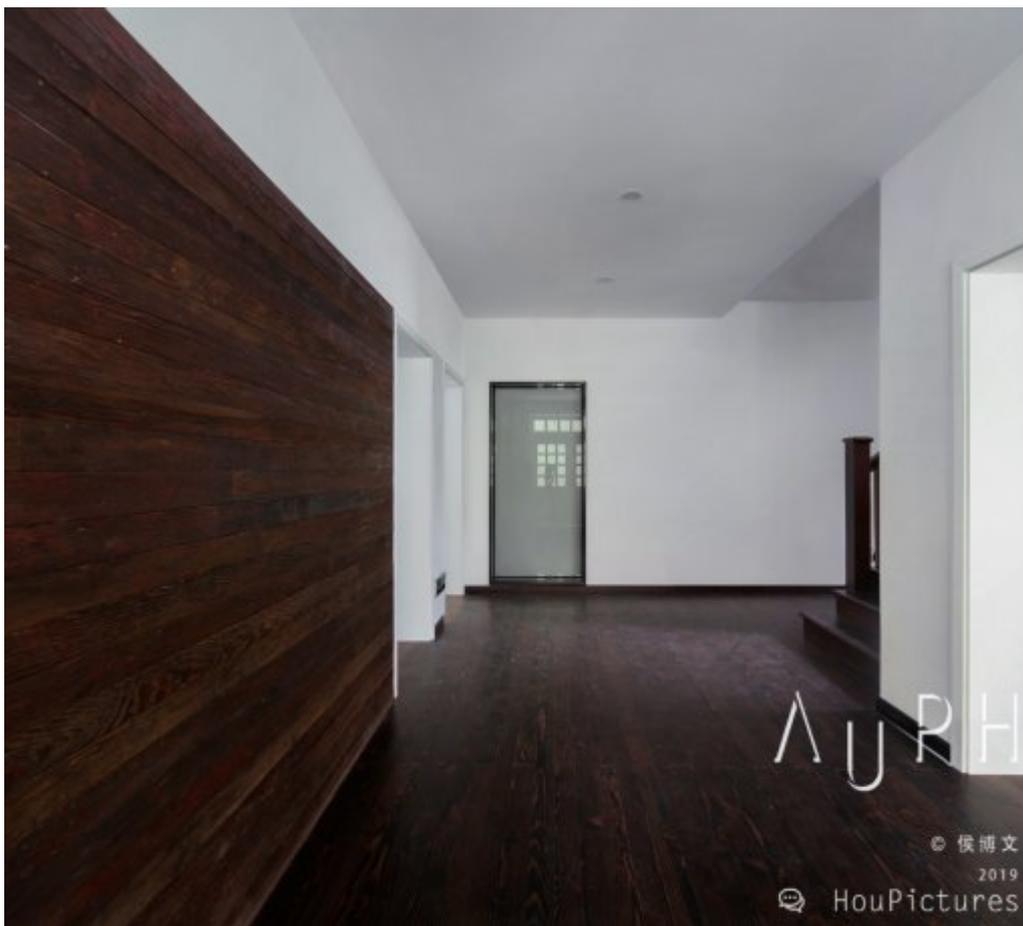


Figure 21 An interior wall covered by decking timbers disassembled from the ground floor

Source: Photo credit belongs to Bowen Hou

Regarding the upper floor, after dismantling the ceilings, it was clear to see that the timber joists were laid into walls at both ends to support the load of the upper floor. In addition, X-shaped timber connections were used in the cavities between the timber joists under the floor to ensure its structural integrity and stability (Figure 22). The quality of the

upper floor timbers was better than those of the ground floor, so the timber decking on the upper floor was preserved to ensure the material authenticity.



Figure 22 X-shaped timber connections between the timber joists

### ***5.6 Survey and conservation of the roof***

The roof of Williams' House is special and complex. It is composed of a three-roof system. To understand its roof systems, a digital model was built in which the three roof systems are coloured yellow, brown and purple, respectively (Figure 23). The diagram shows the loft area under the brown roof truss with three dormer windows attached to it. As the brown roof truss covers the main loft space with the largest span, it reaches 12.5 metres, with  $120 \times 250 \text{ mm}^2$  in section size. These spans and sizes of materials are rarely used in Chinese residences in the early 20th century, demonstrating the special architectural heritage value of Williams' House.

In terms of roof conservation, the loft space was renovated and the roof structure was intentionally exposed to show its value. Most of the roof boarding has been retained except for some leaking pieces, and insulation is planned to be added above the roof boarding to meet current requirements; although this process has been cancelled as a result of administrative issues.

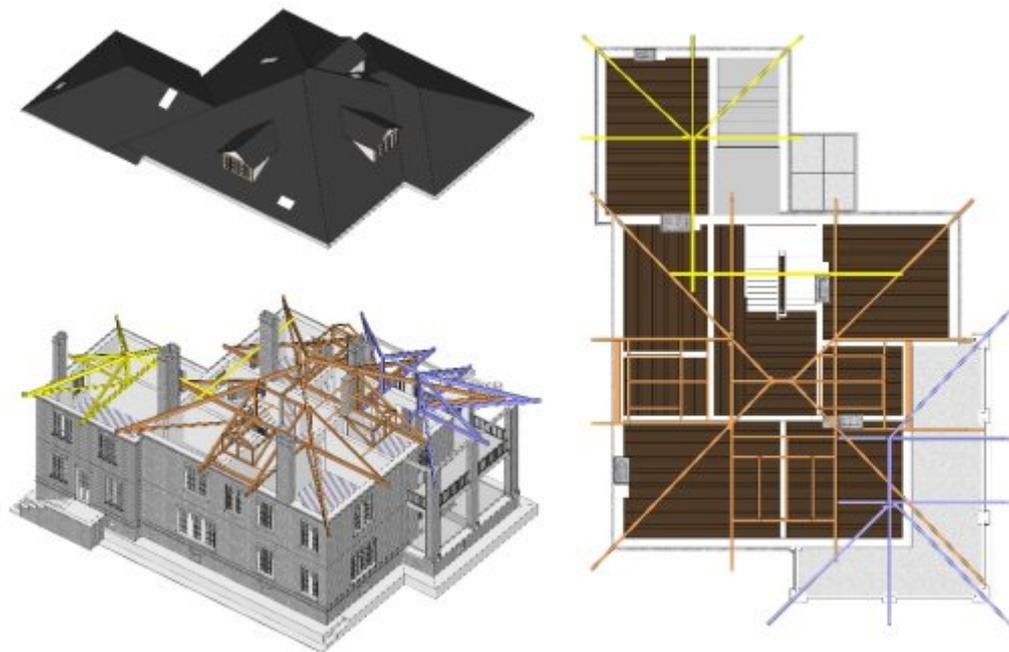


Figure 23 The digital model of the roof truss (top) and photo of the roof truss after renovation (bottom)

Source: Photo credit after renovation belongs to Bowen Hou (bottom)

## 6. Discussion and conclusion

By analysing collected historic documents, photos and maps, this research-based project discovers an anonymous building constructed before 1911 as the residence of J. E. Williams, a former vice president of UNK. Archives and documents reveal the life story of Williams,

especially his contributions to higher education in China and to the construction of the UNK campus, which enrich the history of the university. In this project, how to highlight the original form and appearance of the house by researching its construction conditions and techniques, and how to link the architectural heritage of the house with Williams' contribution to the construction of UNK were deliberately considered.

A campus is a place with *genius loci*. This requires us—as students, staff and alumni—to understand the history and development process of our campus. An understanding of campus history may help us build a connection between us and the campus, and shape our identity. More importantly, architectural heritage along with its built environment becomes the 'time-space mark' of campus because they store the history and memory of the place and play a role as an educator and an advocator for the unique information of the campus. Therefore, regarding conservation, the history and information attached to the campus architectural heritage should be respected to maximise its cultural influence and create a sense of place.

In conclusion, this project offers us an opportunity to see Williams fought for higher education in China. His sacrifice should be remembered and his contributions marked along with Williams' House on campus become a symbol that contributes to the sense of place at Nanjing University.

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# 发人深省的发现：南京大学文怀恩旧居复兴

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## 摘要

19 世纪末到 20 世纪初，教会大学为中国的高等教育做出了杰出贡献，并在校园里留下了宝贵的建筑遗产。其中，南京大学的前身——金陵大学在中国近代史上占有重要的一席之地。本项目以改造南京大学校园内的一座无名建筑为契机，阐明该建筑本身价值的同时，也提出了相应的保护方案。项目既对历史文件、照片和地图进行了文献研究，也通过现场调研就建筑特征开展了实证研究。研究发现，该建筑（不晚于 1911 年建成）是金陵大学副校长文怀恩（John Elias Williams）的旧宅。该建筑为临时建造而成，就位于校园中轴线旁，便于监督校园建设施工。本项目研究通过发现确认校园内一座无名建筑的文化价值，为金陵大学的发展历史增添了重要证据，继而丰富了金陵大学的历史。

**关键词：**文怀恩、金陵大学、教会大学、建筑遗产、校园遗产、建筑保护、场所感

## 1. 绪论

19 世纪末到 20 世纪初，中国涌现了一批大学和学院，开启了中国现代高等教育的序章。教会大学将西方现代教育直接引入中国，对文化、教育、科技、医学等领域产生了深远的影响，更对中国的高等教育产生了巨大的影响。这些教会大学不仅为中国的高等教育奠定了坚实的基础，促进了众多领域的人才培养，更在校园规划和校园建筑方面留下了宝贵的建筑遗产。

校园建筑是学校的建筑遗产，在西方是可以代表大学某个学院或校区的重要身份特征。然而，中国的校园建筑遗产并没有得到很好的保护。在中国，校园历史建筑的遗产地位往往与校园建筑遗产价值不相匹配。换言之，校园建筑遗产的价值往往被忽视或未得到正确认知，因此在没有被列入遗产名录的情况下遭到破坏。要认识校园建筑遗产的价值，应考虑到其历史和附带的社会文化和情感价值；并将建筑遗产和校园视为充满人文精神和价值的场所。然而，在中国的许多大学里，由于大学历史和校园环境不相匹配，场所感已经荡然无存，失去了自身的场所精神（genius loci）和场所身份特色（Uzzell 1996）。

如今，场所这一概念在遗产管理领域被广泛使用。从这个角度来看，遗产应该被定义为一个场所中的历史建筑或遗址，及其历史和附带的社会文化环境。正如 Smith（2006，75）所认为的：

*场所这一概念对于理解遗产至关重要。作为场所的遗产，或“遗产场所”，不仅可以被视作为过往人类体验的载体，还可以对当前的体验和世界观产生影响。因此，一个遗产场所可以代表或象征特定个人或群体的身份和归属感。同时，它也可能构成一个人的反应和一个人在这个场所可能有的体验，并框定和定义这些遭遇所产生的社会意义。*

本项目的研究对象为南京大学鼓楼校区北园一座不起眼的无名校园建筑。受南京大学行政部门的委托，对该建筑进行翻新改造。南京大学的前身为金陵大学，并沿用了金陵大学位于当时首都南京的校园旧址。本项目旨在通过考据历史照片、地图、文件和相关档案，以及对现场和建筑进行踏勘，发现校园内这座无名建筑的历史和价值，解决该建筑是何时建成、谁曾在这栋楼里工作或生活、这座建筑与校园有什么关系等研究问题。希望研究结果有助于决定实际如何保护这座建筑及其周围环境的价值，从而进一步丰富校园的场所感和身份特征，让校园与师生和校友相互联结。

本项目基于研究开展，采用了实证研究的方法，对史料和实物进行了相互验证。具体来说，通过研究文献和档案（历史、文件、照片和历史地图）了解关于这座无名建筑的历史信息；同时开展踏勘现场和建筑，探索建筑特色等关于建筑本身的信息。

在建筑调查方面，项目团队于 2018 年至 2019 年参与了现场和建筑调查以及保护。通过细致踏勘建筑的空间、材料和结构，重建了建筑的数字模型，分析和了解其建造过程和特点。然后，基于建筑的现状信息、史证考据和数字模型分析，对建筑进行了修复。史证考据和建筑分析对敲定该建筑的保护性修缮方案起到了重要作用，希望通过实施该方案在校园内营造场所感。

## 2. 发现校园内的一座无名建筑

下图说明了项目团队考证发现曾在这座建筑内工作或生活的关键人物的过程（图 1）。

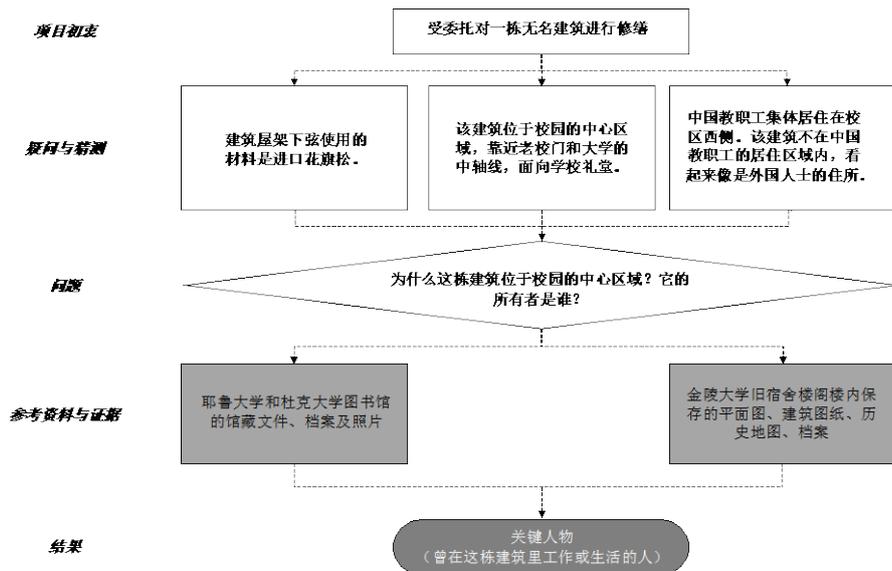


图 1 考证发现曾在这座无名建筑内工作或生活的关键人物的过程

研究之初进行现场踏勘时，发现了一个由坚固木材搭建而成的复杂屋顶结构，其下弦为花旗松，长 12 米。根据中国建筑史记载，花旗松当时并不是一种可于中国本土取材的建筑材料，而是由海外进口的，很少用于本土建筑。因此怀疑该建筑的所有者/使用者/管理者有能力获取进口材料来建造该建筑。此外，该建筑的布局不同于传统的中国住宅，说明它被设计为西式住宅。位置方面，该建筑位于老校区主轴线的旁边，地处校园的中心区域。因此，产生了两个新的问题：为什么这个建筑会建在金陵大学的中心区域？谁曾在这座建筑里工作或居住？作为一所由美国教会建立的教会大学，金陵大学有相互独立的教学和宿舍区域。这座建筑位于校园的中心区域，其特别的地理位置意味着它的使用者可能是社会地位较高的西方人士，且一定与大学有密切的关系。

历史地图和文件可能包含关于谁在这栋房子里工作或居住的线索。然而，1910 年代到 1970 年代期间，南京发生了一系列毁灭性的历史事件，包括南京大屠杀和全国范围的文化大革命。借着 2002 年南京大学百年校庆期间翻修校园建筑的机会，在校园宿

舍的阁楼里发现了一箱历史文件、地图和建筑图纸。它们可能是被特意存放在那里，以避免被销毁或没收。

这些文件包括金陵大学校园规划图，项目组队将地图按时间顺序排序，以确定住宅的建造时间。第一张显示“新住宅”轮廓的地图是一张 1911 年的校址勘测图。此后，这栋房子出现在每一张校园地图上，在图 2 展示的 1919 年金陵大学购置的 **ing** 房地产地图上，该建筑被标记为“Mr Williams House #9”（中文名标注为“文宅”），这提供了一个关键信息。自此，曾今居住在这栋房子里的关键人物出现了。这也引出了下一节中解决的问题：

- 文氏人（Williams）是谁？
- 为什么他的住所会建在校园的中心区域？
- 文氏人及其旧居对南京大学有什么意义？

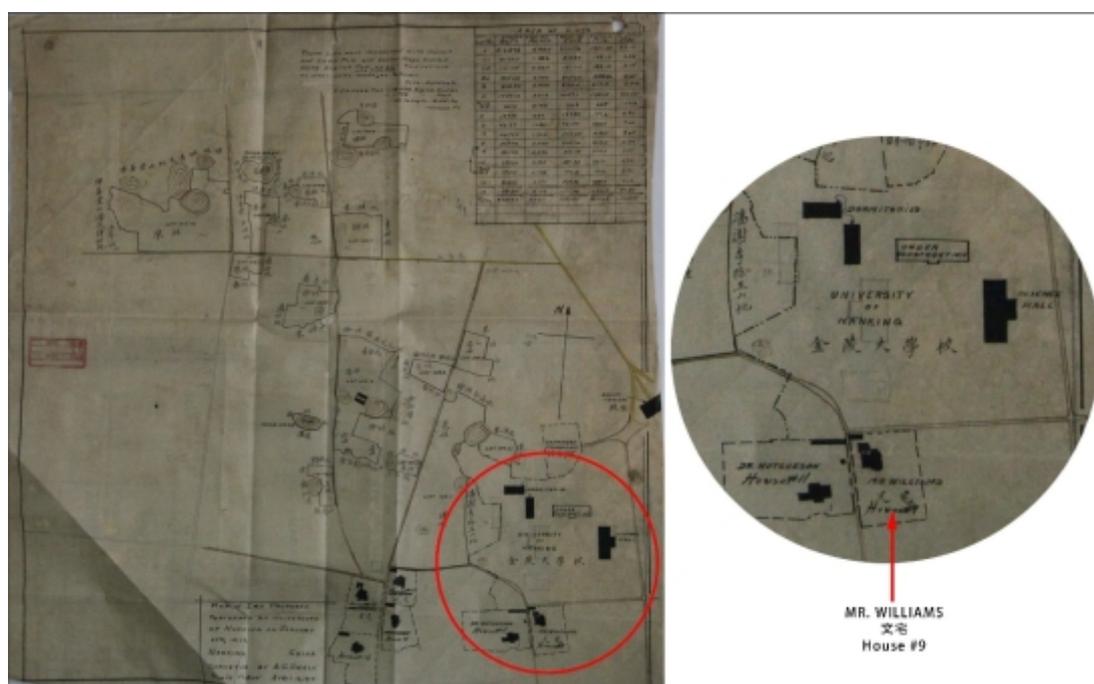


图 2 金陵大学购置的 Ing 房地产地图

来源：南京大学档案馆（第 15 卷，校园规划）

### 3. 发现文氏人

#### 3.1 文氏人是谁

2011年，笔者访问美国宾夕法尼亚大学期间，偶然购买了一本名为《John E. Williams of Nanking》（书名可直译为南京的文怀恩）（Wheeler 1937；图3）的二手传记。根据这本传记显示，文氏人的全名是文怀恩（John Elias Williams）（1871-1927），出生于（美国）俄亥俄州科索克顿。

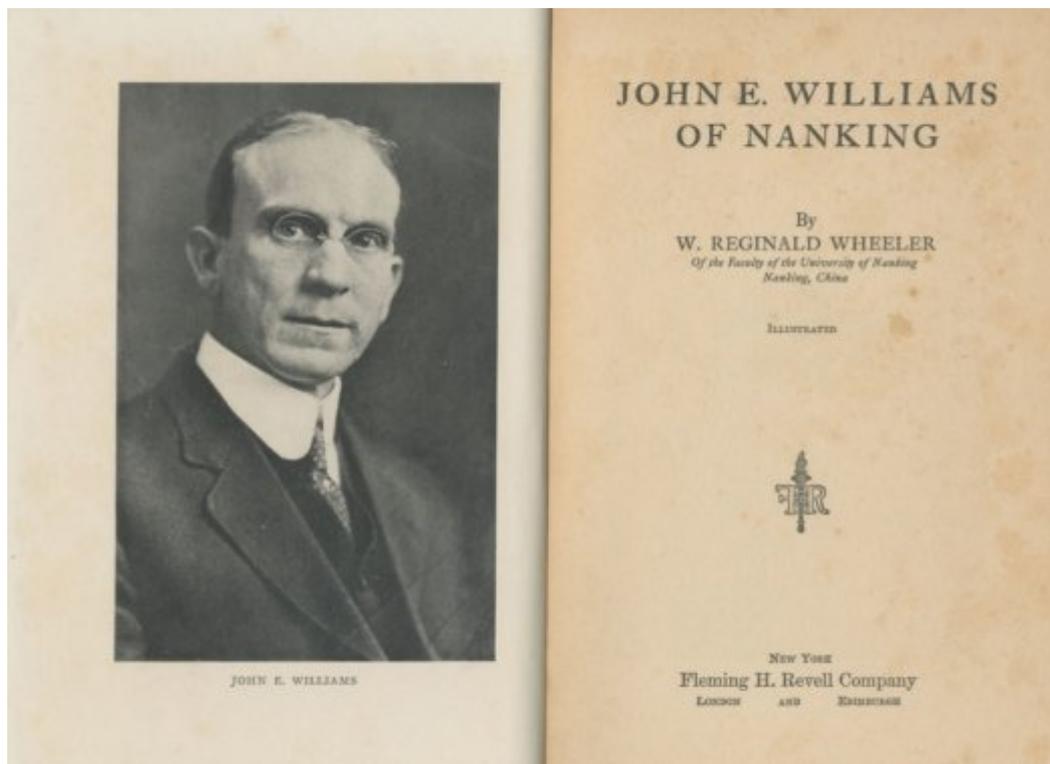


图3 《John E. Williams of Nanking》

文怀恩接受委任，成为派往理事会华中差会的传教士，由纽约长老会为他在中国供职提供“特别资金”。文怀恩及其妻子莉莲（Lilian Williams）远渡重洋来到中国，参加了于1899年9月20日在苏州举办的差会会议。正是在这些会议上，“新任命的传教士一般会被分配到一个差会，而差会则有权将传教士分配到外地的某个站点”

(Wheeler 1937, 43)。在益智书院<sup>1</sup>的第二任校长贺子夏(TW Houston)辞职后,文怀恩接替任第三任校长(Wheeler 1937, 58)。

在益智书院任职期间,文怀恩考虑到各个教会分别在南京办学,造成教育资源分散的问题,主张各所教会学校和教会应联合办学而不是相互竞争。这一思考促成南京拥有了一家联合办学学校。为了推动不同差会在南京联合办学,文怀恩于休假期间筹措了3万美元的现金和认捐,以及1万美元的土地信贷,为建立新的联合办学大学——金陵大学打下了基础(Wheeler 1937, 65-66)。1906年,益智书院和基督书院<sup>2</sup>合并,取名为宏育书院。1910年宏育书院又与汇文书院合并,成为金陵大学(金陵大学,图4),文怀恩则被任命为副校长(Wheeler 1937, 58)。

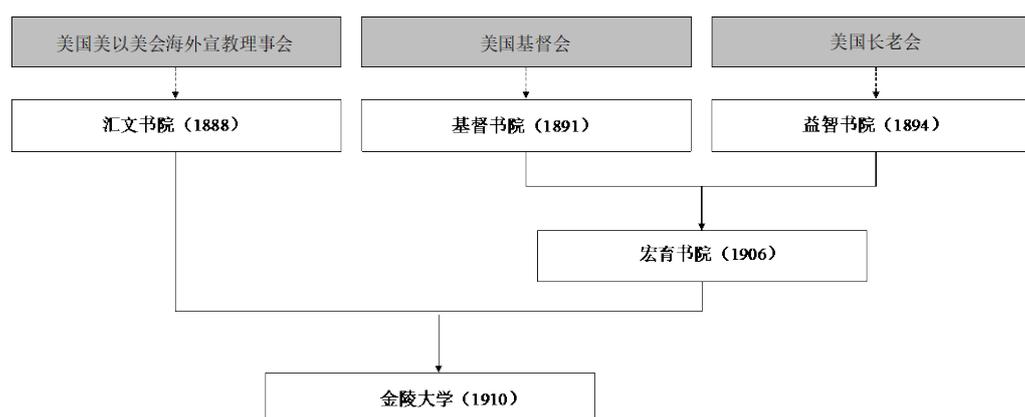


图4 金陵大学的发展历史

### 3.2 文怀恩之死

文怀恩对推动中国高等教育发展有着重要影响。然而,他在1927年的南京事件<sup>3</sup>中不幸身亡。尽管关于南京事件众说纷纭,但普遍接受的情况是,国民革命军江右军

<sup>1</sup>美国长老会创办了益智书院。

<sup>2</sup>美国基督会创办了基督书院。

<sup>3</sup>南京事件发生于1927年3月21日至23日,当时参加北伐战争(1926-1928)的国民党(国民革命军)军队攻入南京。国民党军队尤其针对南京的外国居民;一些外籍人士受伤或遇害,财产被抢劫,美国、日本和英国领事馆也遭到袭击。

于3月22日攻抵南京，北方的直鲁联军被迫退入城内。江右军随后于3月24日突入城内，造成混乱。在此期间，中国各地都开展了大规模的排外活动<sup>4</sup>：抢劫和掠夺频繁发生，一些外国人甚至被杀害。这些都促成了南京事件的发生，对金陵大学产生了毁灭性的影响。其中，最令人悲痛的莫过于副校长文怀恩遇害一事。Wheeler（1937，25-26）对1927年3月24日上午事件的描述如下：

包文博士（Dr. A J Bowen）<sup>5</sup>面前的士兵拿走了他的表；文怀恩博士面前的士兵伸手去抓他的表和表链。文怀恩博士用中文友好又半开玩笑地说道：“给我留下这表吧。它不值什么钱，是母亲给我的纪念品。”这位态度恶劣的士兵将步枪指向文怀恩博士，猝不及防地扣动了扳机。随着一声“怪！怪！”，一颗子弹穿过文怀恩博士的太阳穴，文怀恩应声倒地。

文怀恩的死是令人悲痛的，也是具有悲剧色彩的。据谢金才（2018）了解，文怀恩的墓地位于南京清凉山的西南山麓的外国人公墓（已被毁）。他的墓碑上刻有时任国民政府外交部长的王正廷撰写的墓志铭，具体内容可见《Tribute in Memory of Dr. John Elias Williams》（金陵大学副校长文怀恩氏墓表）（图5）。在这篇墓志铭中，王正廷肯定了文怀恩对中国的贡献以及他对中国人民的恩情，并对文怀恩的去世表示深深的遗憾和悲痛。

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<sup>4</sup>自20世纪20年代初以来，出现了非基督教运动，旨在从中国的外国教会手中“夺回”教育。运动反对基督教教育所带来的帝国主义文化入侵，旨在推动中国教职员开展民族主义教育；后来，非基督教运动愈演愈烈，进一步发展为全国性的反帝国主义行动，也是1925年五卅运动的一部分。

<sup>5</sup>包文（A J Bowen）为时任金陵大学校长。

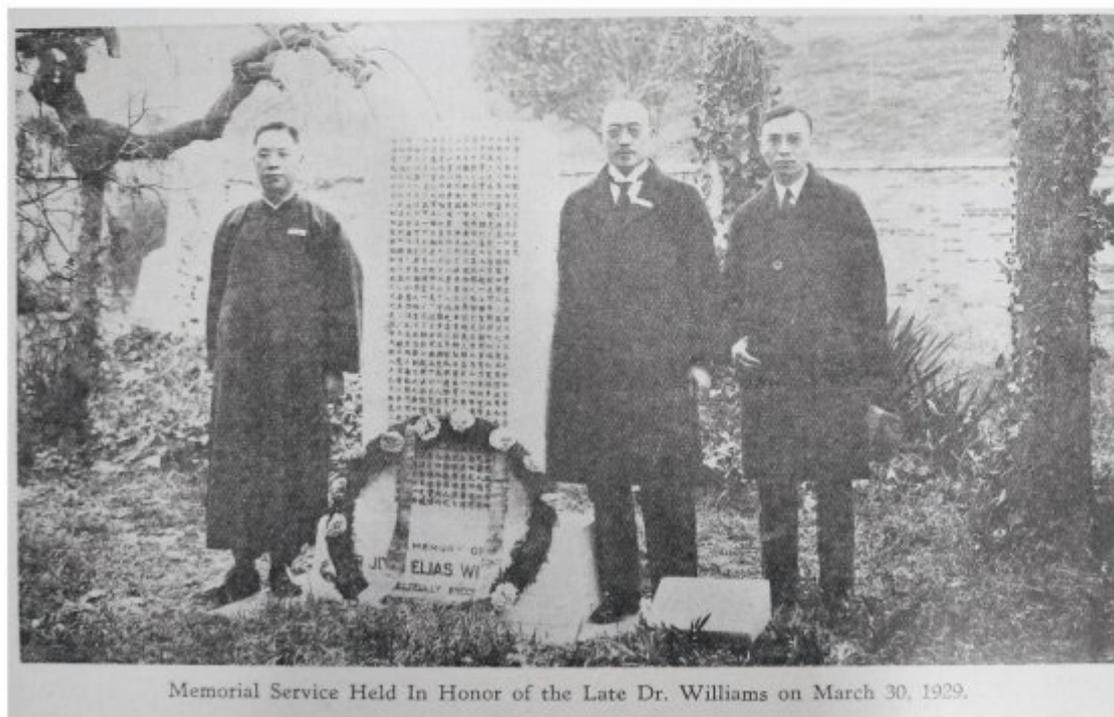


图5 文怀恩墓志铭副本（上）及文怀恩墓照片（下）

来源：收录于耶鲁大学神学院图书馆文献库的《Tribute in Memory of Dr. John Elias William》

#### 4. 文宅和金陵大学

##### 4.1 文宅的选址原因

在搜集到的材料中，最早包含文宅的是一张由美国建筑师于 1911 年绘制的金陵大学学校址勘测图（图 6）。这张珍贵的地图清楚地展示了金陵大学校园周围的路网系统、

池塘和房屋地块。该地图还显示了当时已有的教会建筑（红色）和那些后来为建设校园而拆除的非教会建筑（灰色）。

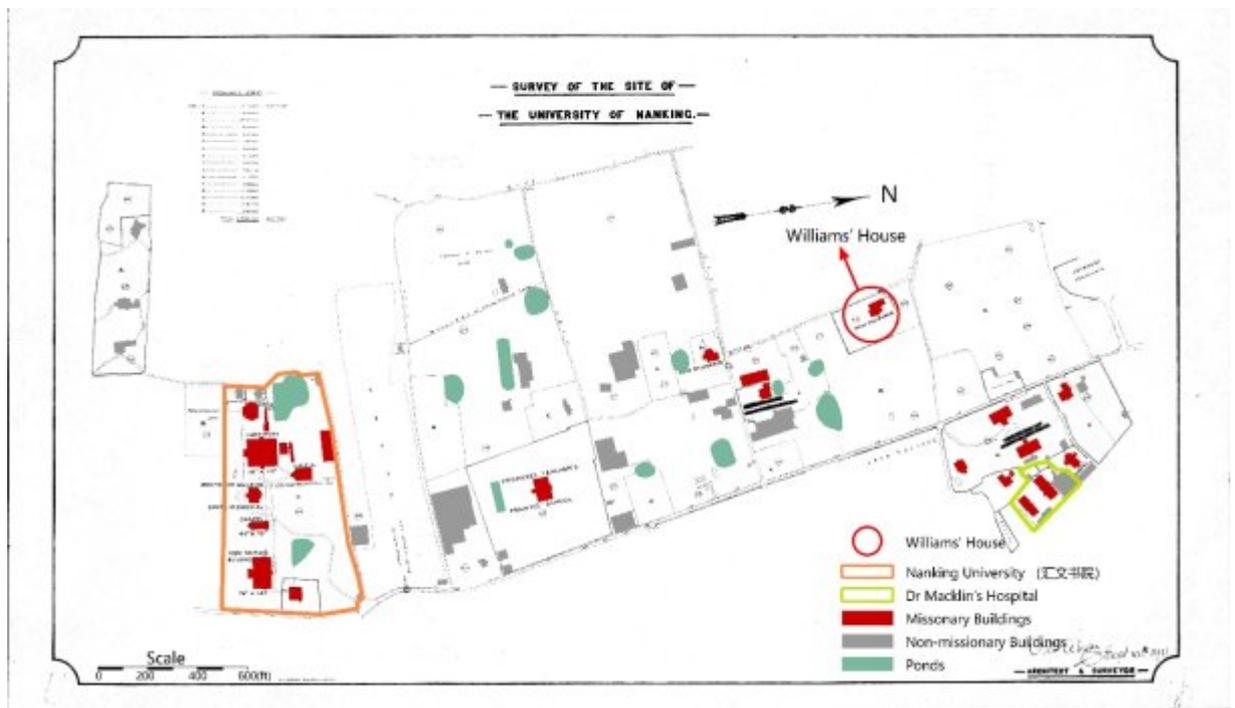


图 6 1911 年金陵大学校址勘测图

来源：耶鲁大学神学院图书馆文献库（196-3833 号箱）

这张 1911 年的校址勘测图显示了几座新的住宅在地图上的位置，包括从形状上辨认出来的文宅。校园北侧尽头的空地，也就是今天南京大学的历史地标区，进一步证明了文宅位于校园的中心区域。这就产生了一个问题：为什么这栋房子会建在大学校园的中心区域。在搜集到的材料中，一张 1914 年的校园规划图为您解答这一问题提供了线索（图 7），文宅的轮廓与图上一座用虚线标记的建筑轮廓重合，布洛克住宅（Bullock's House）也是如此。这些建筑图纸表明，这两座房子计划被拆除，从而留

出空间用于未来建设新的建筑。也就是说，文宅应该只是临时建筑。

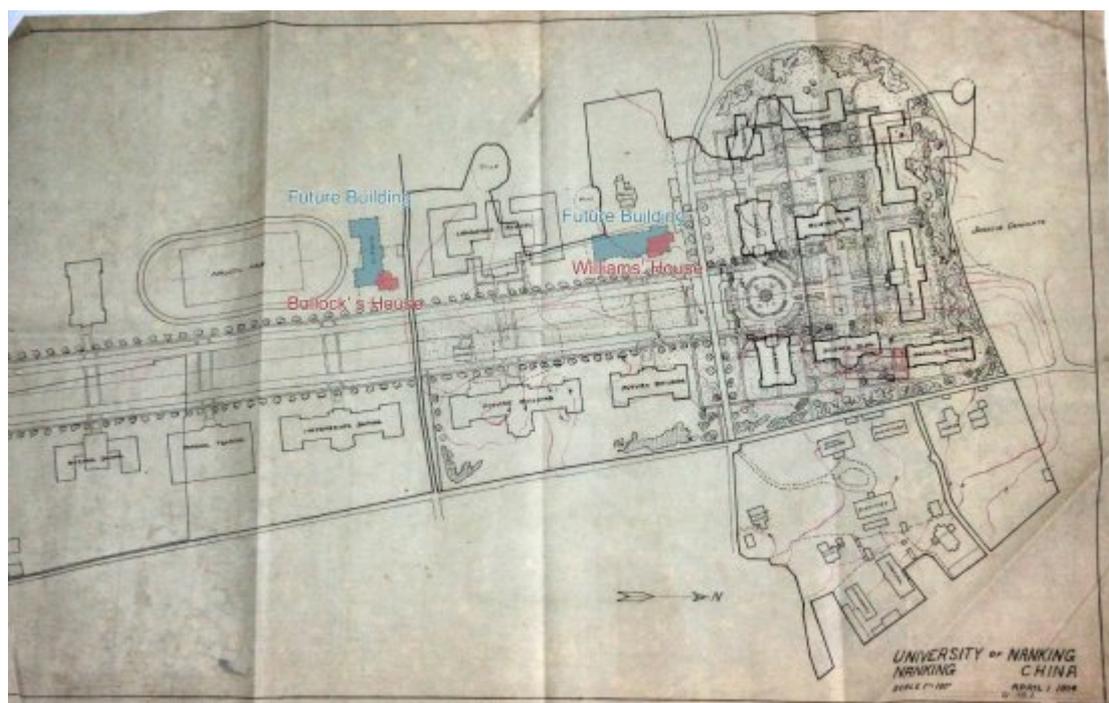


图7 金陵大学校园规划图（1914）

来源：南京大学档案馆（第16卷，校园规划02）

在搜集到的材料中，有两张从文宅拍摄的照片。照片显示，文宅有着开阔的视野，可以将未来的校区尽收眼底。因此可以推断，这栋房子是作为监督校园内学校建筑施工的瞭望塔而建造的（图8）。此外，将1914年的历史地形图与校园规划图相互叠合（图7）显示，文宅是在1914年之前落成的，当时旁边计划用于未来建造其他学校建筑的土地仍然是一块倾斜的空地，这也印证了上述假设（图9）。

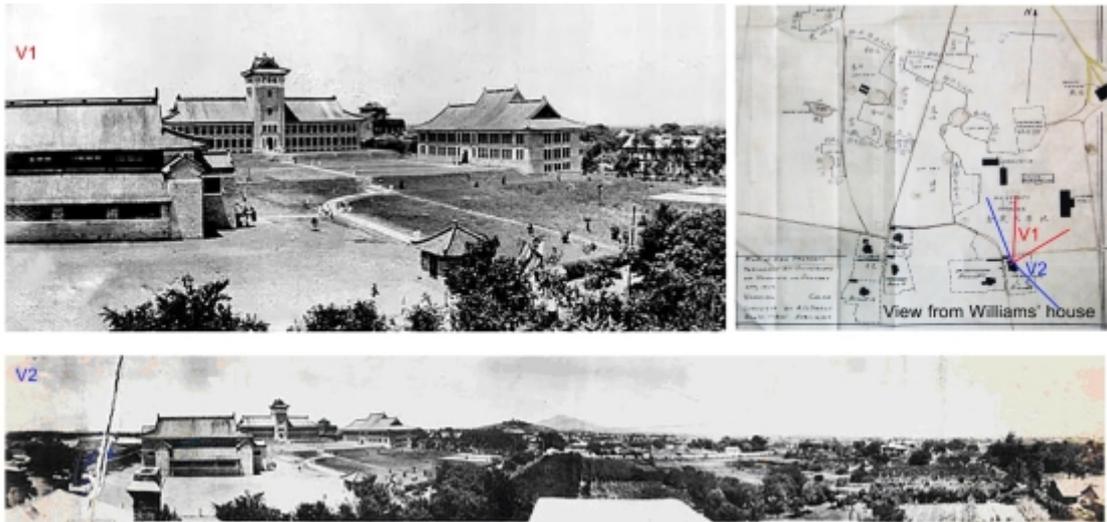


图 8 从文宅拍摄的照片

来源：南京大学档案馆



图 9 校园地形图（1914）

来源：南京大学档案馆（第 16 卷，校园规划 06）；笔者根据图 8 绘制标记出了校园建筑和文宅的位置

如上所述，所有考据的材料都证明文宅是南京大学校园北端落成年代最早的建筑单体之一，是文怀恩在校园定居并在中国建立一所新的现代高等教育大学的雄心壮志的证明。

#### 4.2 通过历史照片了解到的文宅建筑信息

在发现了金陵大学和文宅之间的关系后，可以确定这座住宅的遗产价值。出于委托项目的考量，也有必要了解这座建筑的原貌，从而进行保护和修复。

帕金斯、费洛斯与汉密尔顿建筑师事务所（Perkins, Fellows & Hamilton Architects）（1925）在《American Architect》（美国建筑师）这一期刊上介绍了金陵大学的校园建筑和校园规划。论文中附有一张全景照片，展示了包括文怀恩旧居、礼拜堂（Sage Chapel）、行政楼（Severance Hall）、理学院（Swasey Hall）和校园外的鼓楼在内的几处建筑（图 10）。

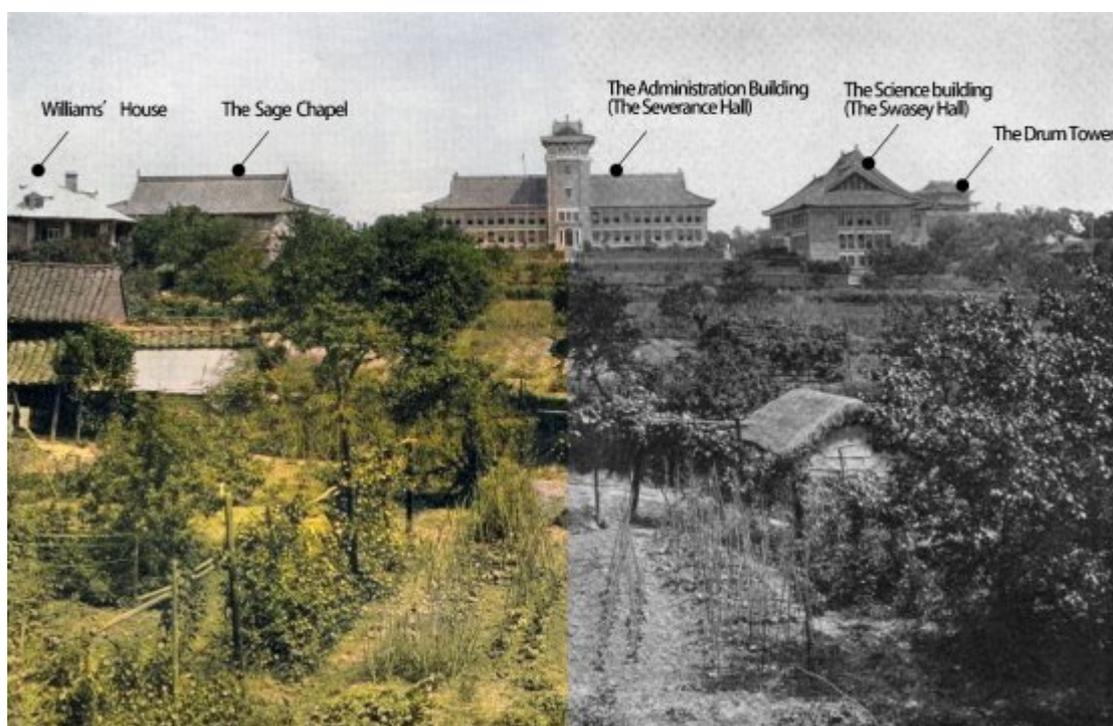


图 10 金陵大学早期校区全景（1920）

来源：（帕金斯、费洛斯与汉密尔顿建筑师事务所，1925）

这张金陵大学礼拜堂的照片是从甘博（Sidney David Gamble）<sup>6</sup>的摄影集中修复而来，拍摄时间在 1924 年至 1927 年之间。为了更好地展现礼拜堂丰富多元的外观形象和周围风貌，甘博特意从建筑物东北角取景，顺带将文宅的北立面也一并纳入了取景框（图 11）。

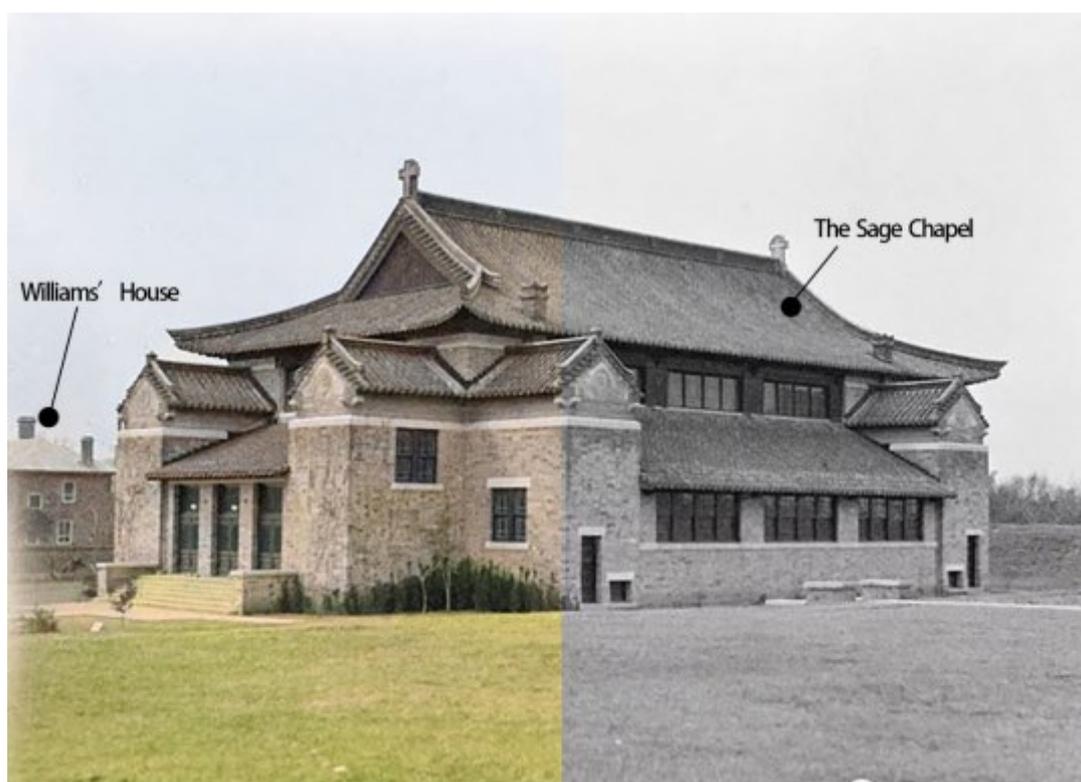


图 11 金陵大学礼拜堂和文宅北立面（1924-27）

来源：杜克大学图书馆

作为一个翻新项目，文怀恩故居的修缮工作的目标是恢复其原始建筑外观；然而，由于文宅已经经历过多次翻新改造，其外部和内部的建筑特征已经发生了巨大的变化。图 10 和图 11 提供了关于文宅原始形制和外观的依据。从这些分别从文宅北侧和南侧拍摄的照片可以看出，文宅有三扇老虎窗（分别在南侧、东侧和西侧），这些老虎窗在目前的建筑中得到了保留。在建筑的东侧还可以看到一个阳光敞廊

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<sup>6</sup> 甘博（Sidney David Gamble, 1890-1968）是美国社会经济学家。他曾多次造访中国，拍摄了大量记录 20 世纪处中国风貌和中国人民生活方式的照片。

（sunporch）。中国传统住宅很少设有阳光敞廊（即游廊），它反映了西方家庭的典型生活方式，并影响了 19 世纪末以来中国住宅的现代化进程（刘亦实 2011）。然而，文宅的阳光敞廊可能不仅仅是一种生活方式的特征。根据我们在图 8 中的视觉分析，文宅的阳光敞廊可能被用于监督校园建筑的施工进度。

尽管图 10 和图 11 提供了有关文宅原始形制和外观的依据，但却不能反映建筑材料的颜色。得益于人工智能技术，项目团队能够使用在线人工智能照片着色器，对上传的黑白照片进行自动着色处理，无需任何调整。<sup>7</sup>例如，着色后的照片显示，文宅是用灰色墙砖砌成的，有四扇美国风格的白色木窗，还有两个烟囱，屋顶是浅色的，这些都有助于开展后续的修缮工作。

## 5. 对文宅进行文物建筑保护

2018 年，文怀恩旧居被南京市政府列入历史建筑保护名录，项目团队受委托为这座建筑制定保护方案。

2018 年接受委托后，我们细致考察了这座鼓楼校区北园历史最悠久的建筑。踏勘发现，文宅由主屋和附房两部分组成，总面积为 667 平方米，包含一个地下室（67 平方米）和一个阁楼（73 平方米）。主要的建筑材料是砖和木材：主屋和附房都是由砖石和木材建成的。这是 20 世纪初结合中西方建筑和结构特点的典型结构（李海清 2004, 9）。位于南侧的主屋具有典型的美国房屋特色，而由厨房和楼梯组成的附房则位于西北角。房屋的主入口向东。一层有三个房间（原本用作客厅、阅读室和餐厅），二层有四间卧室。在主屋的东南角，一层和二层均设有阳光敞廊。

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<sup>7</sup>本文中，将着色后和原始的照片进行了拼贴展示，从而对比展现两者的差异。

在通过下文介绍团队的踏勘和保护策略之前，图 12 展示了文宅进行保护性修缮前后的外观，读者可以借此对改造的效果有一个大致印象。在下面的章节中，笔者将分五个部分介绍踏勘和保护工作。



图 12 保护性修缮前后

### 5.1 砖墙的踏勘与保护

由于该建筑被多个部门进行了多次翻修，建筑布局发生了巨大的变化。内部空间被增建墙体重新划分，清水砖砌外墙被涂抹上了厚厚的水泥砂浆。要修复一座历史建筑，就需要了解它是如何建成的。为此，项目团队剥去了水泥砂浆，拆除了后来加建的封闭阳光敞廊的外部砖墙，恢复原始布局，露出原始的外部材料，随后进行踏勘。在检查主屋和附房的连接部分时，我们发现，主屋和附房的外墙明显采用了不同的砌筑方式（图 13）。目前还没有找到有力的证据来解释为什么该建筑由两个部分组成，并且还使用了不同的砌筑方式。一种猜测是，这种差异反映了工匠们在节省砖块和施工时间方面的创新。尽管外墙不同，但主屋和附房的柱基都是用一种叫做荷兰式砌合

法（Flemish Bond）的坚固砌筑法建造而成，以确保地基的稳固性。

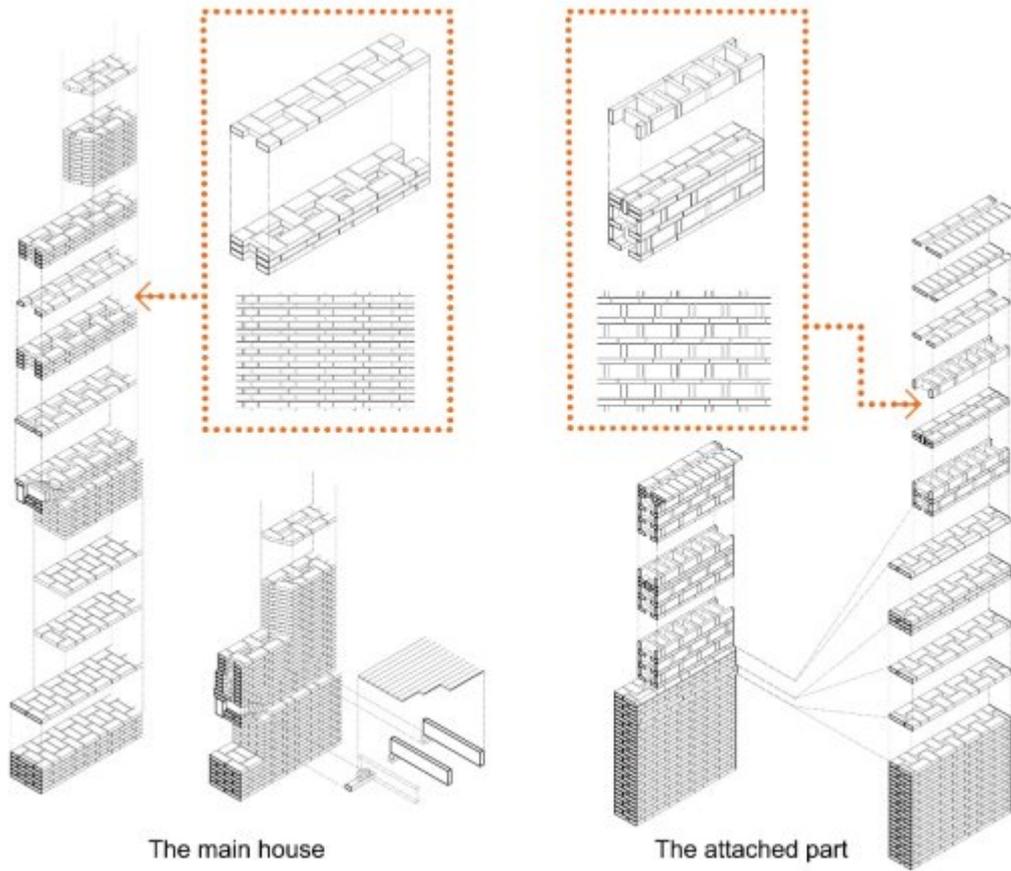


图 13 主屋和附房的砖墙砌筑方式

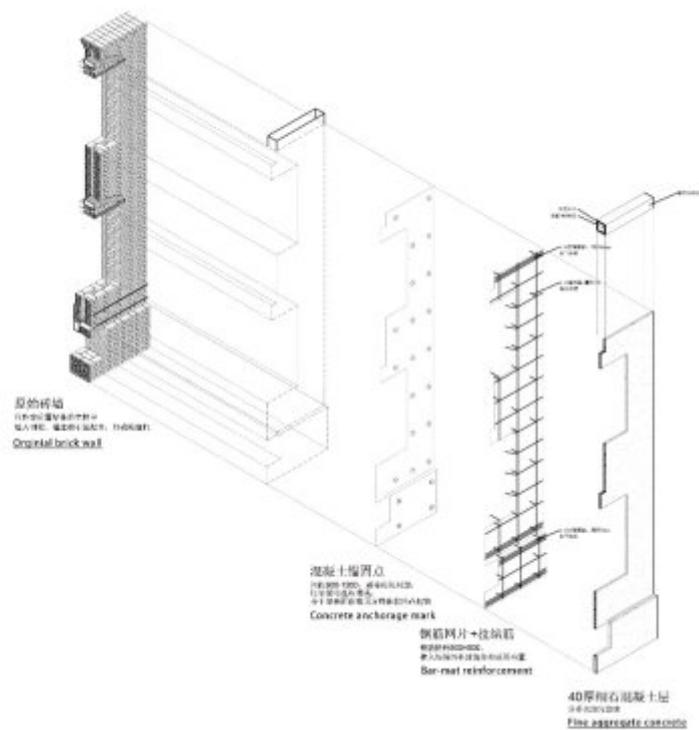


图 14 砖墙加固

踏勘过程中，水泥砂浆被剥落后，建筑的砌体结构显得很脆弱，房屋多处砖块损坏，变得粗糙破碎，结构上不稳固，需要加固（图 14 左）。为了保护建筑外墙的清水砖面，在外墙内部植入了钢筋网片和拉结筋进行加固（图 14 右）。

外墙的一些原始开洞被封堵了，洞口周围有部分碎砖。基于我们对砖墙开洞建造方式的研究（图 15），我们根据墙壁上的残余的痕迹和房屋原始布局对开洞进行了修复。例如，更换碎砖，并采用原始施工工艺增加平拱过梁<sup>8</sup>，恢复门窗开洞（图 16）。通过上述保护性修缮，恢复了墙壁原貌。

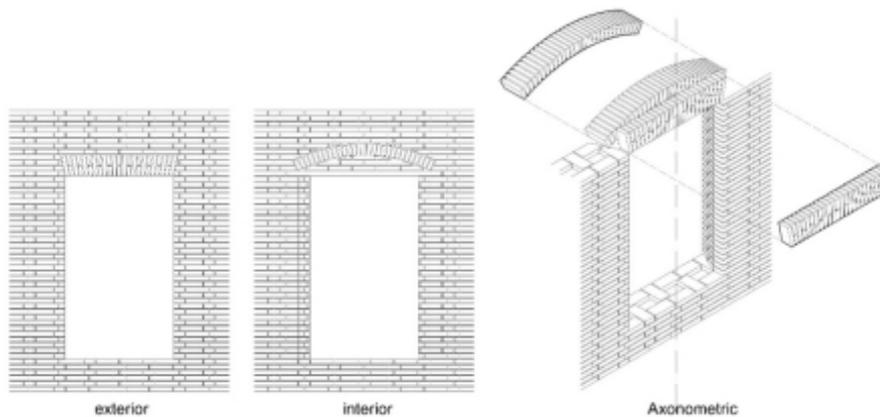


图 15 对砖墙开洞建造方式的研究



图 16 一处开洞的修缮前后

<sup>8</sup> 平拱是由切割好的砖块呈放射状立砌而成的过梁或门楣，拱券顶部水平，顶部可呈水平或拱形。

## 5.2 内部空间的踏勘与保护

文宅的内部空间布局有其历史价值。然而，由于该房屋在翻新修缮前曾作为办公楼使用，且计划于修缮后继续用于办公，其历史价值和使用价值之间可能存在冲突，因为其布局已经且未来也将在一定程度上被改变。因此，改造应该在历史价值和使用价值之间作出妥协和平衡。

为了平衡其历史价值和使用价值，项目团队基于建筑踏勘绘制了当前的一层和二层平面图，并设计了能够最大限度地恢复新文宅原始布局的新平面图（图 17）。剥离水泥砂浆后，能够看到一些指明房屋隔墙原始位置的痕迹。根据这些证据，包括现存的痕迹和校园内其他类似房屋的平面图（如布洛克住宅和赛珍珠故居），新增了轻质隔墙。如 5.1 节所述，为了满足结构安全的要求，对外砖墙的内部进行了加固。外墙内侧和新增的轻质隔墙都被涂成白色，以增加室内空间的亮度。由于在调查过程中发现了白色的抹灰，将室内空间涂成白色平衡了历史价值和使用价值。此外，一些原始的砖墙被保留下来，特别是壁炉，他们是历史的象征，也是当时南京美式风格房屋的典型室内特征。



图 17 文宅平面图（修缮前和修缮后）

来源：翻新修缮后的照片为侯博文所摄（左）

### 5.3 阳光敞廊的踏勘与保护

阳光敞廊是文宅立面的另一个重要元素，我们猜想文怀恩就是从这里监督校园内的建造施工。如图 12 所示，在保护性修缮之前，阳光敞廊被加砌的砖墙所封堵，清水砌砖被涂抹上了厚厚的水泥砂浆，墙面被饰以白色涂料。因此，项目团队采取的第一步是拆除加砌的墙壁，以勘测阳光敞廊的原始状况。拆除过程中踏勘发现，阳光敞廊的立柱是砖砌而成，仅用木梁连接，而木梁又被虫蛀，导致阳光敞廊的结构非常脆弱。嵌在柱子上的一块碎片表明，阳光敞廊周围最初安装了围栏，为后续保护性修缮提供了依据；然而，经历了多次翻修之后，围栏已不复存在。此外，柱子上的孔洞的大小和位置表明曾经的楼板下安装了吊顶。

这些猜测后来被一张从东南角拍摄的文宅照片所证实（图 18）。虽然照片的画质不佳，但它清楚地显示了带有白色天花板和围栏的阳光敞廊，以及需要恢复的白色门窗。



图 18 一张模糊的文宅照片

来源：南京大学图书馆

由于阳光敞廊上方设置了吊顶，所以即便不修缮原始的横梁，也能够在不影响建筑外观的同时，通过运用新材料和新技术对结构进行加固。为了恢复阳光敞廊并确保其结构安全，项目团队使用了钢筋混凝土来重建楼板，在此之上再覆上木铺板。虽然原始阳光敞廊的楼板中并未使用钢材，但钢材不会受蛀虫危害，因而具有更好的耐久性，且可以隐蔽于楼板下方的吊顶内（图 19）。



图 19 阳光敞廊的修缮过程

#### 5.4 地下空间的踏勘与保护

要想加固文宅的砖墙，就要对地基也进行加固。移除一层的木铺板时，发现了一个有趣的地下空间。

为了保护房屋不受来自地下的湿气影响，文宅内部建造了架空木地板和地下通风系统。文宅的地下空间建有砖砌的地垄墙，用来支撑架空地板的龙骨。这些地垄墙将地下空间划分为几个区域，不同区域之间的墙上留洞通风。主屋的地下空间包含八个区域——两个长条区域、五个短矩形区域和一个 L 形区域（图 20）。除 L 形区域外，每个区域的外墙上都有一个通风口让空气可以相互流通。地下一层的空间划分让潮湿的空气可以被带走，从而延长一层木地板的使用寿命。

地垄墙一般建在通风区的中间，与外墙垂直，将地下空间分隔成不同区域。然而，文宅的地垄墙在两个位置与外墙斜向连接（图 19 中的红色圆圈位置）。这种不寻常的砌筑方式规避了在外墙中轴线上开设通风口。因此，人们猜测文宅可能匆忙建成的，斜向连接可能是建造过程中现场作出的调整。

鉴于室内和室外空间存在高差，团队设计了两个平台作为附房的侧面入口。为了最大限度地利用东侧平台下方的空间，团队在下方安装了一个半地下的应急消防水池

（图 20）。附房下方消防池旁边就是西翼的地下区域。这块区域除了用作通风区域外，还兼具储藏功能，这样地下通风区域就将主屋和附房隔离了开来。

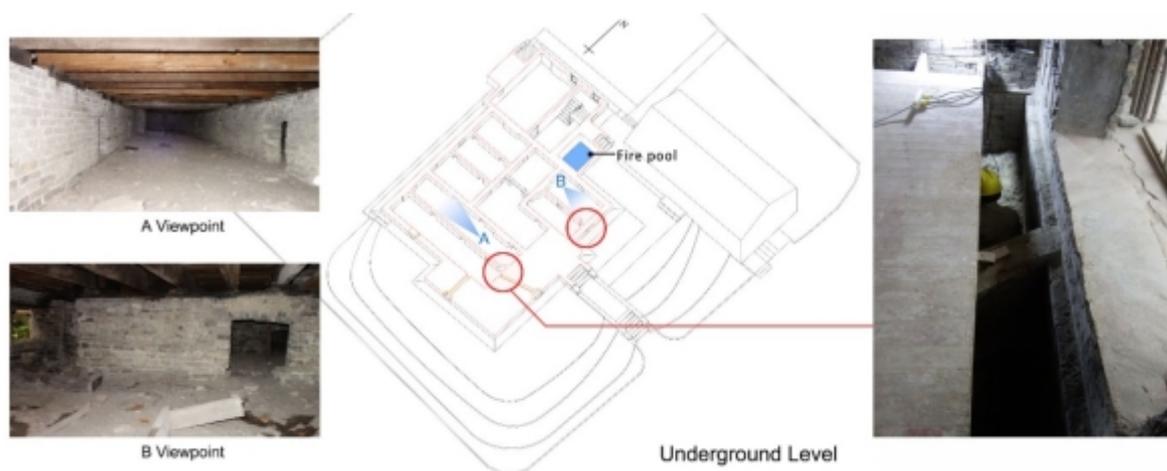


图 20 文宅的地下空间

### 5.5 木质楼板的踏勘与保护

在文宅大面积使用了木材，特别是花旗松。花旗松是一种优质木材，少有结疤，具有很高的强度、耐磨性和耐腐蚀性，20 世纪初被大量进口至中国并用于建筑建造。在砖木结构中，由砖墙支撑木梁。在文怀恩旧居中，楼板由木梁和木铺板组成。

如第 5.3 节所述，项目团队拆除了建筑一层的木铺板，对地基进行了加固。完成这步操作之后，为了保护建筑的遗产价值，应该恢复一层的木铺板，以确保材料的真实性；但是，原始木材有所磨损，导致楼板不平，因此学校管理方要求使用新的合格木铺板来代替。为了保持材料的真实性并保留与原始木铺板相关的集体记忆，原始板材被用作纪念性的装饰，铺设在一面内墙上，让人们可以通过触摸原始板材感受到它所蕴含的年代感和场所感（图 21）。



图 21 一楼拆除的木质铺板材料被铺装在一面内墙上

来源：侯博文所摄照片

二层的楼板方面，拆除顶棚后，可以清楚地看到，木梁两端都被固定在墙内，以承托二层楼板的重量。此外，楼板下方木梁间隔处有 X 形的木材连接件，以确保其结构的完整性和稳定性（图 22）。二层的楼板木材质量优于一层，所以选择保留了二层木铺板，以确保材料的真实性。



图 22 木梁之间的 X 形的木材连接件

### 5.6 屋顶的的踏勘与保护

文宅的屋顶特别而复杂。整个屋盖包含 3 个屋顶。为了了解文宅的屋顶系统，我们建立了数字模型，将三个屋顶系统分别标记为黄色、棕色和紫色（图 23）。图中显示了棕色屋架下的有三个老虎窗的阁楼区域。棕色屋架是三个屋顶系统中跨度最大的，覆盖了大部分阁楼空间，其跨度达 12.5 米，截面尺寸为 120×250 平方毫米。这样跨度和尺寸的材料在 20 世纪初的中国住宅中非常少见，显示了文宅特别的建筑遗产价值。

屋顶保护方面，团队翻新了阁楼空间，特意将屋顶结构暴露出来以展示其价值。除了漏水的板材，大部分的屋顶木板被保留了下来，还计划在屋顶木板上方增加保温隔热层，以满足当前的使用要求；不过由于行政问题，未能按计划增加保温隔热层。

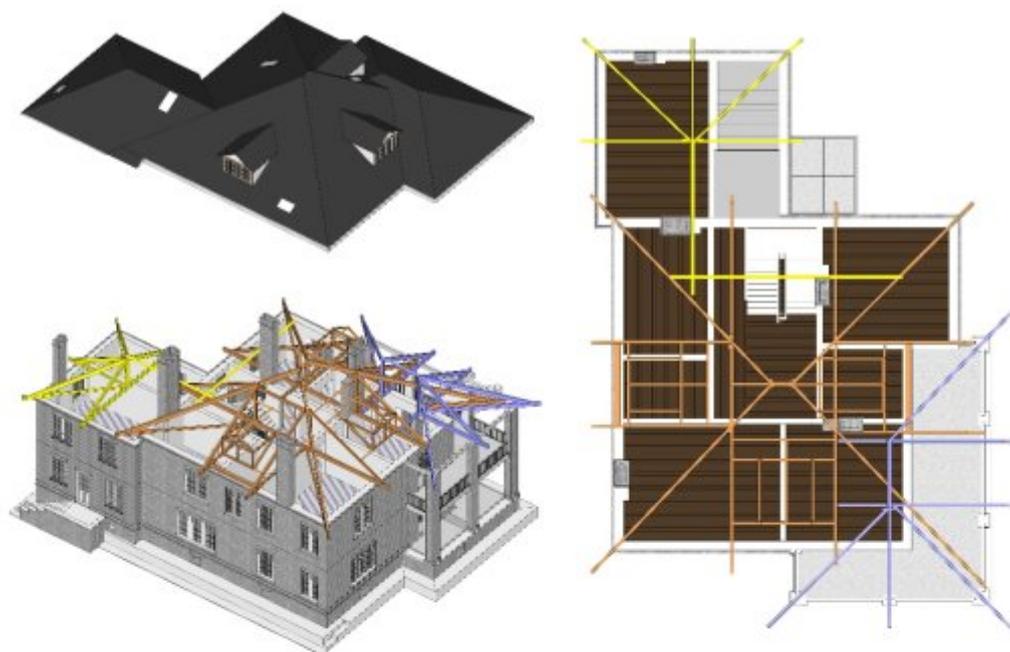


图 23 屋架的数字模型（上）和改造后的屋架的照片（下）

来源：翻新修缮后的照片为侯博文所摄（下）

## 6. 讨论与总结

通过分析搜集到的历史文件、照片和地图，本研究型项目发现一座在 1911 年之前建造的无名建筑曾是金陵大学前副校长文怀恩的旧居。考据档案和文件，了解了文怀恩的生平，特别是他对中国高等教育和金陵大学校园建设所做出的的贡献，进一步丰富了南京大学校史。本项目细致考量了如何通过踏勘文宅的建筑状态和建造技术来突

出其原始形制和外观，以及如何通过文宅的建筑遗产保护反映文怀恩对建设金陵大学所做出的贡献。

校园是富有场所精神的地点。这就要求我们，作为学生、教职工和校友，了解校园的历史和发展过程。学习校史可以帮助我们在我们与校园建立更深刻的联系，塑造我们的身份。更重要的是，建筑遗产与建筑环境共同构成了校园的“时空标志”，它们储存了所在空间的历史和记忆，具有宣传和普及校园信息的作用。因此，在保护方面，应尊重附着在校园建筑遗产上的历史和信息，最大限度地发挥其文化影响力，并营造场所感。

总的来说，本项目为笔者提供了一个契机，让我们了解到了文怀恩为中国高等教育所做的奋斗。他的牺牲应该被记住，他作出的贡献和校园里的文怀恩旧居一起，共同构成了南京大学场所感的重要符号。

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# **An enlightening discovery: Renovation of Williams House on the campus of Nanjing University**

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